SUPPLEMENT.

The Mining Journal,

RAILWAY AND COMMERCIAL GAZETTE:

FORMING A COMPLETE RECORD OF THE PROCEEDINGS OF ALL PUBLIC COMPANIES.

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Original Correspondence.

COAL-CUTTING MACHINERY.

SIR,—There has been a good deal of discussion in the Journal as to the relative merits of the pick and the rotary principle, yet none of the disputants appear to have thought of both being superseded by the direct cutter, such as was suggested by Messrs. Carrett and Marshall, of Leeds, and some others.

This latter principle has been adopted, much improved in detail, by Mr. Bain Munro, of Forfar, and I trust his machinery will at least have a fair trial. In carrying out his invention the cutter is made in the form of one-half of a hollow truncated cone, and is held in a conical socket formed for it in the holder. The cutter fits a recessed part of the conical head of a spindle, and is prevented from turning by the shoulders of the recess, whilst the spindle is itself prevented from turning by a projection on it entering a groove in the side of the socket. Perhaps some correspondent will state what objection can be raised against this invention. C. H. M.

Forfar, June 8.

COAL-CUTTING MACHINERY.

SIR,—In his letter to you, dated May 6, Mr. Bass states that the Gillott and Copley Machine "does three times the amount of work" as the Pick Machine can do, and with this enormous superiority in its favour I was certainly not prepared to find that he would not support the statement, by the extremely small risk that he would run in putting 100*l.* into your hands, and I doing the same, the owner of the best machine receiving back his own money, and should also be left to select a charitable institution to receive the benefit of the 100*l.* deposited by the owner of the inferior machine. These terms, it will be observed, only required that Mr. Bass should cut about one-third of the quantity that he alleged he was constantly doing.

But Mr. Bass says that it would be a "bet," and that he will not put down "stakes." I must accept his refusal, although I may not quite understand or appreciate the feeling which dictated it. When he made the statement he must have had the intention of damaging the reputation of the pick, and benefiting himself in the larger sale of his own machine; and I can scarcely reconcile his scrupulosity touching the "bet" with the other motives in view. However, so stands the matter, and I have now to cast about to find out, if possible, some other plan by which we may bring about a practical issue.

I have applied to, and have obtained the consent of, the owners of the New Market Colliery to allow a contest, and they have agreed on the condition that we pay all expenses, which is quite reasonable, and the same terms will, probably, be required at other places. I think it would be quite proper that the owner of the inferior machine should pay those expenses, and I am quite prepared, if Mr. Bass will do so, to deposit a sum sufficient to cover the event. Then, in order to give a chance of a fair issue, I propose that I should send a machine to New Market, and another to the colliery under the management of your correspondent, the "Mining Engineer," as both places are at present worked by Mr. Bass's machine; that he should send his machines to work in two seams in the West Yorkshire Colliery; that at West Ardsley the two machines should be put entirely under the control of Mr. Bass and his agents, and that the machine should in all cases start from the ordinary stables, and be returned thereto when the benks are finished; that two men only should be permitted to take part in the working and management of the pick, and three to Mr. Bass's machine; that at New Market the two benks named by Mr. Bass shall in like manner be placed under the control of my agents, and similar arrangements at the other collieries represented by the "Mining Engineer;" that the pressure of air shall be prescribed by the owner of each machine, the account of which shall be taken at the receiver.

Burley Wood, June 9. —— WILLIAM FIRTH.

COAL-CUTTING MACHINERY.

SIR,—Since I last wrote you we have unexpectedly had an opportunity of seeing one of Mr. Firth's Pick Machines at work in the Wooley Colliery, near Barnsley. In pursuance of an appointment made with Mr. Cooper, the engineer of the colliery, I sent my son over there on Monday morning last, and he has handed me the following report of what took place:—

REPORT OF A VISIT TO WOOLEY COLLIERY ON MONDAY, JUNE 7, TO INSPECT THE WORKING OF MR. FIRTH'S PICK MACHINE.

I arrived at the colliery at about 12·30, and at 1 P.M. the men who had charge of the machine went down. I should say that the machine was to cut on this day in a benk 130 yards long, the cutting is let, and four men are found necessary to ensure its proper working. Their first business is the laying of the road, and dressing of the coal face. The road laying is a tedious and costly operation; it has to be perfectly straight and level, and securely wedged and chocked every 4 ft., both on the coal side as well as against the pack and the rails are fixed in wrought-iron sleepers. All these precautions are necessary, owing to the peculiar action of the machine, and the constant jar caused by the pick; but, as will be seen afterwards, even these are not sufficient to keep the road in its place. At 2·30, accompanied by Mr. Cooper, I went down the pit, and first saw the air-engines; these consist of two steam-cylinders, each 12-in. diameter and 28-in. stroke, and two air-cylinders same size, and are sufficient to work one only of the pick machines. We then went to the face where the machine was to work, and found the men had already brought it from where it had been standing, a distance of 200 yards. One of the men was employed in re-fixing the pick-arm, which I learnt had to be taken off each time the machine was moved, and is an operation about equivalent to the taking off and refixing the cutter wheel of our rotary machine, two were straightening the coal face and fixing the road, and I was much surprised to see the fourth employed with a hand-pick, cutting a hole about 2 ft. long and 18 in. deep to enable the pick to begin to cut its setting in hole, and this had to be done 2 yards from an open end, where our machine would have begun without any hand cutting at all; this 2 yards has to be undercut by hand.

At 3·30, or 2½ hours after the men went down, the air was turned on, and the pick with two newly-sharpened points was set to work to complete the setting in hole, which had already been hand-cut 18 in., to the required depth of 3 ft., and this took up about 20 minutes. I then measured off 3 yards; the men put in fresh points. The air at 40 lbs. pressure was turned full on, and every one was determined to do their best to get as near as possible to the speed said to have been attained at Tingley—3 yards in 3¼ minutes. At the end of 17 minutes, out of which there was a delay of 2 minutes, 1½ yard had been cut; and, notwithstanding the way in which the road had been chocked and wedged, it had got so much out of position that it was impossible to go further, and we were obliged to give it up. I ascertained that the ordinary rate of cutting this bank of 130 yards is three shifts of eight hours each, which is at the rate of 5½ yards per hour, and that on one occasion they cut 90 yards in 16 hours, which Mr. Cooper considers the best work he has ever done; this included a stoppage of two hours to remove the machine, equalling 5⅔ yards per hour of actual cutting time. It usually takes the four men two hours to remove the machine and set it in its place for working, and they are obliged to have a pony to help them. The man in charge of the machine when cutting has to propel the machine with one hand and work the slide valve of the engine with the other. The machine does not clean out the cut, as ours does, but leaves a hard pack at the back, which a man has to rake out before the coal can be brought down.

In concluding, I will add that I find the managers of Woolley Colliery consider they are working the machine to fully as good results as any one, so that the foregoing statement may be taken as a fair rate of word for the pick machine. WM. BASS.

I think, Sir, the above report goes far to explain why there has been on the part of Mr. Firth such a determined holding back of information as to the actual working of the pick machine, and why he has had to bolster up his cause by abuse and ridicule of the rotary machine and its advocates. Mr. Firth has always stated the speed of his machine to be 7½ yards per hour, but here we only get an actual return of a little more than 6 yards, even when the machine is doing its best, and this has to compare with the 21 yards reported by you to be the pace you witnessed the rotary machine to be working at Adwalton, and which agrees with my experience elsewhere. I have little doubt but that the Gillott and Copley machine would undercut one of the 130 yards benks in one shift, which takes the pick three shifts to accomplish. I will not trouble you with further calculations on the subject at present, as the report speaks for itself. I adhere firmly to all I have written, and have no intention of detracting from any part of it.

The foregoing only makes the superiority which I have claimed for the rotary system still greater and more apparent, even the much vaunted argument of having no setting in holes and ends to cut is gone, and I fail to see any one point in which the pick has the advantage. I do not know whether it rests with you to make arrangements for the trial. I see Mr. Firth says nothing about it, but when this comes off I have no doubt I shall fully be able to establish my position of great superiority.—*Sheffield, June 9.* I. G. BASS.

SULPHUR IN COAL.

SIR,—I have just read your leading article on Sulphur in Coal, in the Journal of June 5, in which attention is called to the fact that the practical ironmasters of South Staffordshire are complaining that the analyses of coal published in books do not give the percentage of sulphur which is invariably present to some extent in the coal. I was just preparing for publication in the *Mining Journal* a series of analyses, which include an entire seam of coal, when my attention was attracted to your article. I will forward these analyses, with your permission, for one of your next numbers, and, in the meantime, perhaps you will allow me to remark that for the last 10 or 12 years I have invariably determined the percentage of sulphur in all coals sent to my laboratory. I have always worked upon this determination, as being quite as important as any other items of the analysis, and have never once neglected it. I have heard it stated by South Staffordshire ironmasters that there is no sulphur in their coal; this opinion has been derived, doubtless, from consulting works in which incomplete analyses are recorded. If that were a fact, how does the sulphur get into the coke? Sulphur is present in all coals, and hence it is present in all cokes, *without exception;* but the quantity in different seams of coal or in different qualities of coke varies very considerably, and the value of the coal for iron making (puddling, forging, &c.) varies accordingly. Hence the determination of the amount of sulphur present in a sample of coal is a matter of considerable importance, and, I may add, it requires very great care, and a perfect degree of purity in the chemical reagents used, to obtain thoroughly trustworthy results.

One advantage of knowing the amount of sulphur present in the coal is that it enables practical men to judge very accurately of the amount that will be present in the coke produced from it. The whole of the sulphur in the coal or coke does not get into the pig, as anyone can convince himself by the odour of sulphurous acid in the air in the neighbourhood of the Staffordshire blast-furnaces. It is, fortunately, less tenacious than phosphorus; nevertheless, when coal or coke contains much of it, it is well to be aware of the fact, as it may give rise to endless difficulties. The same coal may be used, for instance, in the puddling-furnace, and then the sulphurous acid plays upon the purifying metal, and imparts sulphur to it.

Putney, London, June 5. T. L. PHIPSON, Ph.D., F.C.S.,
Member of the Chemical Society of Paris, &c.,
Analytical and Consulting Chemist.

COAL IN NEW SOUTH WALES.

SIR,—The rapidly increasing demand for coal in these seas necessarily makes that colony of growing importance which can most readily supply it, and as probably very little is known in England of the vast coal-bearing measures of New South Wales, and some of your readers may wish for information, I beg to forward you the rough results of late enquiries here.

Our Government Inspector of Coal Fields states the total known area to be about 15,000 square miles in all, extending, or rather out cropping, more or less, from Jervis Bay in the south, to Newcastle in the north, and with known indications still 200 or 300 miles further north, whilst westward (inland) they show again at from 70 to 100 miles from Sydney. Of course, the quality varies, the Wollongong and South Country coal generally being a steam one more especially, but as there are no less than six seams in the face of the mountain there, it is quite probable some of them may prove the same as the Newcastle Wallsend seam, which is classed now in China and the East as even superior to the best English coal, and which is known to cover an area of from 10 to 15 miles west and south of Newcastle, and which being in a flat country for that distance, with very few breaks, and only about 200 ft. below the surface, has proved to be so easily, safely, and cheaply worked as to make Newcastle the coal port here, the tonnage yearly there being even in excess of Sydney itself, and the fortunate shareholders in the principal companies there have been not only receiving handsome dividends half-yearly, but every now and then 1*l.* return per share of the original capital. This, of course, arises from the sudden demand of the last three or four years, caused by the employment of cargo steamers through the Suez Canal—the New Pacific Mail Steamer Fleet—the demand for the China and Indian trade, and for the large steam coasting trade of the whole of North and South Western America, from British Columbia to Valdivia; also for gas companies, as different ports and parts of these rapidly civilising Eastern lands and islands want "more light."

Three years ago we sold annually about 800,000 tons, last year it was over 1,200,000, and ships had to leave in ballast because there were neither wharves, cranes, railways, nor mines enough opened to supply the demand. This, of course, suddenly wakened up to the great prospective, as well as the immediate, loss if it were not soon remedied, and the Government are now straining every nerve to nearly double the shipping appliances, and within 12 months from now there will be certain facilities for shipping at least 2,000,000 tons, with other works progressing also for the future increase. As the coal has to be brought from 6 up to 16 miles the present lines are pretty fully occupied, and if we wish to keep our trade we shall have to soon set about making loop lines and branches on to the other known coal-bearing land, so as to have more pits open, and arrange for a continuous string of wagons on the main Government lines themselves.

The Newcastle seams outcrop in the cliffs round the port, and even from the bar of the entrance to Lake Macquarie; but at a few miles inland, where the principal mines are, the first good seam is cut at from 150 to 300 (average, say, 200) feet depth, whilst beneath this again at different depths are other seams, so that the real quantity of coal under the surface is almost incalculable, but, of course, the Wallsend seam, from its known reputation all over the East, is the principal one worked. There are also other mines opened at Hexham, Maitland, Greta, Anvil Creek (and of splendid quality the two latter ones), and also large beds of good kerosene shale overlying, which latter finds a ready market in San Francisco, Melbourne, and other Australian ports for gas-making purposes; but as all these mines are beyond the 15 miles known Wallsend radius, the longer carriage weights them heavily, and, therefore, from its nearness to the port the Wallsend country is, and must always be, the most valuable in the district. Lake Macquarie itself (a few miles south of Newcastle) will be opened up as a port some future day, and when it is the companies that hold land up to it shores, and so have two ports to ship from, will then be the premier ones in all Australia; besides which the land there is heavily timbered with the most valuable woods known here, which alone will be a fortune in time.

Going South, and passing Sydney on the way, the next principal mine is the Bulli Company (specially steam coal), which only has to tunnel into a hill a couple of miles from the sea and bring it by a short line for shipment from a jetty running into the ocean itself, but fairly sheltered by a bend of the coast to the south-east (our dangerous wind quarter); and now that the company work with steam colliers they load almost as safely and quick as even at Newcastle itself, and run up to Sydney and tranship their cargoes there. Bellambi, a little more to the south, is perhaps a still finer seam, and more easily shipped, but it unfortunately belongs to a wealthy family of squatters, who spent over 20,000*l.* in railway and jetty many years ago, when steam colliers were not dreamt of, and because it did not return a fortune at once, stopped work, and the jetty is now crumbling to pieces, though if 5000*l.* in all were spent now on the property they might keep 1000-tons steam colliers running night and day. In the port (or rather basin) of Wollongong itself, small coasters also load in safety from the Mount Kiera Mines (also tunnel ones), and where there is also a kerosene oil manufactory profitably carried on from the splendid shale which runs all through the district. The coal seams here are six to seven in number, so plainly seen in the cliffs that even Capt. Cook noticed them 100 years ago; one of them is 17 feet thick, and if ever a railway is made from the district to Sydney will keep it well employed, but at present the only way to ship them is from jetties, which (from the splendid turpentine trees 70 to 100 feet without a limb, easily got from the ranges) can be built at less than 2*l.* per running foot, and where of course a steamer can safely load up to 600 tons, and for 19 days out of 20.

The next known great seams going south are at the back of Kiama and of Jervis Bay (from which latter about 26 miles of railway would be wanted), where the whole British Navy could ride in safety in all weathers, but as none of these southern coals always command the market, like the Wallsend does (except, as before stated, for steam only, for which they are capital), Newcastle is likely to more than hold its own for many a year to come. The next mines really working are inland—beyond the mountains—about 80 miles from Sydney, at Bowenfels, on the Western line, where the seams are also large, and a very fair quality of coal got, some thousands of tons of which now come down to Sydney, but the real future of which will be to supply the inland towns and for smelting purposes, as where the coal and iron measure breaks—a few miles beyond—the copper and gold land begins, and covers hundreds, if not thousands, of square miles more inland. On the Southern line also, about 80 miles inland, large seams outcrop in the side of the ranges (one 17 ft. thick), and with every prospect of great future value when worked, as iron abounds all about the district, and the copper land also comes in at the back, whilst more to the south galena lodes are plentiful, though none of them are being worked as yet; and beyond them again sandstone crops up, and iron ore again, one seam at Bogolong being 17 to 20 ft. across, and assaying 70 per cent. of metal, and should coal also be found here it will pay handsomely, as it is well on the road for Victoria, where they have neither coal nor iron, and it would, therefore, pay to supply it across the border in competition even with the seaborne British-made iron.

The above are the main mines known to exist, and most of them working, but a large seam outcrops again in New England, 120 miles inland, and some hundreds of miles north of Sydney, and it is known also to exist close up to the boundaries of Queensland, so that we know coal exists north, south, and west of Sydney to an indefinite, but certainly enormous, extent. There are various places on the coast between Sydney and Newcastle where coal is known to be, and also of the best quality, and where the natural indentation and outlying islands or reefs would enable sufficiently safe harbours to be made for steam colliers to load in for at least 19 days out of every 20, and where, probably, the cost of forming such harbours would be compensated, as compared with other mines, by the short tramways necessary. Notably among the "likely places" is the bight immediately to the south of Lake Macquarie, where, by filling in between an island and the main land, vessels could lie in from 3 to 4 fms. sheltered on three sides, if not even wholly; and again at Bungaree Norah, nearer still to Sydney (being only about 36 miles distant), where a filling-in of about 400 yards would give a shelter of about ¾ mile, with plenty of deep water, and as at both these places coal outcrops in large seams (one 14 ft.) there is ample scope for future enterprise and capital (when Newcastle has such a trade that her harbour is not big enough!), and there are also, doubtless, several other partially sheltered portions of the coast where steamers could load from jetties for at least nine months out of the twelve, so that taking the size, number, and extent of the coal seams known to exist already, the present facilities, and the prospective future ones, for working them, and their varied quality, it is no exaggeration to say that New South Wales could easily supply the demands of the whole world for an indefinite time to come, and, as a matter of course, if ever the Isthmus of Panama is cut through, and a large low-power class of steamers takes up the carrying trade of the Pacific, West Coast, China, &c., Sydney, as the central port of the coal measures of New South Wales, must become the mistress of the South, and the fortunate owners of coal land reasonably accessible grow into millionaires. Our Government has hardly realised (until last year, perhaps) the immense importance of the coal question, and has left the whole inspection, classification, reporting, &c., to be done as it best could be by one examiner (Mr. J. Mackenzie, F.G.S.), from whose last report I quote the following extracts:—

"The Australian Agricultural, Co-Operative, Wallsend, Warutah, Lambton, and New Lambton (Newcastle companies) are all working the same seam of coal, which varies from 9 to 12 ft. in thickness. It is a bright bituminous coal, and the specific gravity of it varies from 1·2 to 1·326."

"Anvil Creek, Greta, Four-Mile Creek, Mount Wingen, Rix's Creek Companies—splint and bituminous coal, suitable for steam, household, gas, smelting, and coking purposes; specific gravity, 1·2 to 1·33."

"Catherine Hill Bay—sea coast—50 miles north of Sydney, near Lake Macquarie—seam 14 ft. thick—upper part splint—specific gravity, 1·330; lower part splint and bituminous—specific gravity, 1·33."

"Inside Lake Macquarie Heads—large areas, with thick and good seams of coal in them."

Illawarra (40 miles south of Sydney):—"Osborne"—Mount Pleasant—Bulli—Mines—"semi-bituminous coal—steam, household, smelting, and blacksmith's purposes, also rich petroleum oil shale."

Western District (Inland, 80 miles from Sydney), mines, by railway, 100 miles: "Hartley, Lithgow Valley, Wallerawang (and Bowenfels!)—splint coal—household, steam, gas, smelting, and blacksmiths' purposes—specific gravity, 1·3—seam, 10 to 11 ft. thick" (also rich kerosene shale and cannel).

"About eight miles from Wallerawang railway station—several very rich lodes of magnetic, hematite, and other iron ores have been opened out by the Wallerawang Coal and Iron Company (and limestone), and I am informed a thick seam of coal nearer the iron has been opened out since my inspection in 1873."

For steam purposes only the southern coal is preferred by many steamers, and even generally in one port in China, but, as a rule, the Newcastle Wallsend coal carries the palm, and tops the market both in America, China, India, and Japan, and if coal is ever so "flat" that name commands a purchase over all the rest. On the same principle that a "good horse is never a bad colour," I do not see that it matters whether our coal measures be mesozoic or palæozoic, because the seams, worked at different places, depths, and distances, prove themselves of a quality to challenge competition, and even at the same price beat the English coal in demand; but in case your readers think the point of any real importance, I am informed that *savans* have now given it as their scientific opinion that our measures are palæozoic. However, as I only heard it lately, and have not yet been able to ask my friend, the Rev. W. B. Clarke (the geological authority out here), as to whether it is "published by authority" the mere statement must be taken for what it is worth, though I think, judging from the fossils I have seen, there can be no doubt of it; and it is also a question that will soon be set at rest now on scientific authority, as our Government has, at last, appointed one of our own "colonial trained men," Mr. Wilkinson (a gentleman apparently of great promise, judging from his past studies and work), to the post of geological surveyor, and although only just in office he has already visited many of the widely extended districts, and got together a noble collection of "specimens" for our annual Exhibition, and will probably be able to send in his first report shortly as to whether our coal is only "middle aged" or really "old."

To anyone not intimately acquainted with the present progress (and also all the signs of its rapid increase) of trade and civilisation all through the "East" and in Polynesia, it would be difficult to get them to believe how great a demand there must inevitably be for whatever "steam" can do, and although in many places wood will suffice for fuel for a time, still as freights decrease, and certain supplies can be had of coal, it must become an absolute "want" in places little thought of now, and although seams are known to exist in China, Japan, and Labuan, the quality hitherto found is so inferior—especially for steam and gas-making—that it does not even compete in its own market with New South Wales produce.

Another special feature of our "measures" is the extent of the kerosene shale seam, which either over or underlies one coal seam

or another from Newcastle district north to Hartley west, Berriman south-west, and Wollongong south (say roughly 120 miles from north to south, by 100 west). At present, besides manufacturing oil from it for our own supply, we export it principally to San Francisco and our neighbouring colonies for gas-making purposes, and as it is light freight (inasmuch as a ship cannot carry herself full of coal), and the shale is so light that it only fills up what would mostly be lost space, it can always be taken at such a price as will ensure a demand for it. Steam yachts and lighters also promise to become a great institution all through the islands of the Pacific, especially at Fiji (which must become the great sugar producer, with its various islands, splendid soil, climate, and cheap labour), and as the great bulk of the South Sea Island traders sail out of Sydney, and their cargoes being "supplies" enable them to carry coal as dead weight, the reasonable price it will be delivered at will almost create the demand for it wherever, certainty and quickness of transit from island to island is an object.

Victoria also (having no coal of her own) must become a splendid customer to us, as its territory is so small, and its climate being less favourable to variety of produce than ours, that she will be compelled to go into manufactures as far as possible, and in short—wherever steam or gas is wanted—whether in the rest of Australasia itself, up and down the thousands of miles of coast of Western America, through the myriads islands of the Pacific, in Manila, Java, India, China, and Japan, the coal of New South Wales must be had, and from its quantity, quality, and cheapness (especially when more scientifically opened up, and worked on a larger scale) it is scarcely a figure of speech to say we may reasonably expect to supply the future wants of nearly half the world, for when Newcastle cannot accommodate more shipping there is Jervis Bay to the south, and Port Stevens to the north, each of them able to safely shelter a fleet of Great Easterns, and both having large coal fields within 20 to 30 miles inland, which a railway through easy country would at once open up, with, finally, Port Jackson itself able to hold all the navies of the world, as a central *entrepot* for steam and sailing colliers to tranship their cargoes in, or, if necessary, even to be made a focus for conveying coal lines from west, north, and south.

I forward herewith Mr. Mackenzie's last published report (over 16 months old), which not only gives special points of information, but has also diagrams showing sections of the measures, &c., and which may, therefore, be of interest to some of your scientific readers. I trust that the real importance of the coal fields of New South Wales to the future of the whole British empire will be some excuse for the length of this mere notice of them. R. ADAMS.

Sydney, April 14.

NOTE.—The speciality of our field is that the southern coast seams can be worked by tunnels, whilst the richer Newcastle ones lie near the surface, and the known extent is so large that it will be generations before the Wallsend one is worked out, or it becomes necessary to work the lower ones. ——

MINING ON THE PACIFIC COAST—EASTERN NEVADA.

TYBO MINING DISTRICT, NYE COUNTY, NEVADA, AND THE TYBO CONSOLIDATED SILVER MINING COMPANY (LIMITED) OF LONDON—No. VII.

SIR,—"Man proposes, but God disposes," is an aphorism whose truth circumstances have before now frequently confirmed. Three months have, I find, already elapsed since the date of my last letter to the Journal. This, though a brief cycle in Time's eternal march, is nevertheless a much longer period than I at that time intended should pass without having recourse to my pen for the purpose of continuing this correspondence. But, alas! man after all is confined within limits beyond which he is at times unable to venture. He is the creature of chance, and though he may scan the heavens, and follow the planets in their trackless course, and coaxing from Nature her greatest secrets; still, for all these things, there are times when his power, his ambition, and his skill becomes controlled by influences so mysterious as to be entirely without the pale of his comprehension. The Arabs of the Desert are not more nomadic in character than are the majority of the miners of the Pacific States and Territories. This roving disposition is allowed full freedom, too, for there are no permanent homes established amidst the wild mountain ranges of Nevada—that is, homes that would be called permanent in older settled communities. Yet, for all this, there are many comfortable, and even elegant, private and public structures scattered throughout the towns and the mining camps of the State. Even here in Tybo, which until the Tybo Consolidated Mining Company took hold was almost an uninhabited wilderness, can now boast of a thriving town, and cosey homes, that are supplied with all the comforts, and many of the elegancies and luxuries, found in more favoured localities. These are the results of the faith of our people in the future of the camp. They know that our mines are every day putting forth the best of evidence in support of their value and permanence, and so long as this is the case improvements will progress, for wherever the foundation for prosperity is laid there it is bound to exist. Recent discoveries, too, have immeasurably added to the importance of Tybo, which now, in fulfillment of my previous predictions, is rapidly developing into a first-class mining centre, evidences of which will be properly presented in the course of these letters, as shall also all that relates to the most noted of the adjacent districts. The mining interests of Nevada are largely on the increase, and whatever tends to exhibit their growing importance and value will materially assist in bringing into notice the many valuable, and at present partly neglected, mining properties of the State, and will also help to remove the deep-seated prejudices of English capitalists and other operators against American mines in general.

Nevada, like California, is eminently cosmopolitan in all that relates to population and society, every known European and Oriental nationality being represented. Yet, notwithstanding this diversity in clime, race, and language, the utmost harmony prevails in all that pertains to willing submission to the laws and customs of the country. National peculiarities, of course, occasionally crop out, and it is only in such instances that we discover the want of those homogeneous qualities that mark the people of one race and nation. America might not inaptly be styled the Mecca of the world, but it is towards California and Nevada—as to a common centre—that the devotees of fortune must naturally gravitate, all ardently imbued with the same ambitious longings to worship at the same golden shrine. Fame and fortune are the attractions presented, and though many of the wandering spirits who seek these shores may wish for the former, I am of opinion that the majority of them would be quite content with a slice of the latter. Both are, though, in a measure procurable. The big bonanza has already rendered its fortunate owners famous millionaires, sending them with one bound from the lowermost to the uttermost rung of the ladder of life. Notable instances of the crowding of the favours of the fickle goddess are, of course, not of everyday occurrence, even in Nevada. The four holders of the Consolidated Virginia, now producing nearly, if not quite, $2,000,000 per month, have all been poor men. Flood and O'Brien are Irishmen by birth, though not by education. And Mackey too, I think, hails from the Green Isle. The fourth, Colonel Fair is an American. The aggregate wealth of these four men represents a sum equal to $60,000,000, taking the present selling value of their wonderful mine, or mines—for they also own in the California, adjoining—as the basis of calculation. There is but one Comstock in the world, and consequently but one California and Consolidated Virginia.

In order to obtain as reliable data as possible regarding the extent and probable value of the immense ore discoveries of this now famous lode, the directors of the United States Mint, at Washington, some time ago instructed Prof. Schoermer, of Denver, Colorado, to proceed to Virginia City, and make a thoroughly careful estimate of the expected yield in bullion for 1875 and 1876. This was done with a view to provide proper facilities at the various branch mints for separating the Comstock bullion. The Professor has reported as follows: The production for 1875 is estimated at $35,000,000; for 1876, $50,000,000. He also reports that the products of the Consolidated Virginia and California Mines alone will foot up $3,000,000 per month, so soon as the additional milling power, now in course of construction, shall have been completed. From the foregoing figures we can learn something of the vastness of the wealth that lies entombed, as it were, between the walls of the Comstock lode. But whatever is wanting to complete our wonder is supplied in the following extract from the San Francisco *Chronicle* of recent date:

"The production of the three great mines of the Comstock—the Belcher, Crown Point, and Consolidated Virginia—from January, 1871, to April 10, 1875, as is shown by quarterly returns, has been as follows:—In 48 months Belcher has produced 422,406 tons ore, yielding $2,593,885·40; monthly averages, $54,039·30. In the same time Crown Point has produced 457,937 tons, yielding $2,006,970·33; monthly average, $41,832. In 18 months the Consolidated Virginia has produced 1,350,840 tons ore, yielding $9,499,592; monthly average, $527,755."

The latter monthly average, it must be remembered, is far below present returns, $2,000,000, as above shown, being nearer the mark. The above estimates are about double the former yield of the whole of the Comstock lode. They are based upon the ore belts developed by actual exploration, and will increase the annual bullion product of this country for the present year to $85,000,000, and for 1876 to $100,000,000, and the ratio of increase is expected to be in the same proportion for subsequent years. The daily yield of the Consolidated Virginia Mine is 500 tons ore, and of the Belcher 450 tons. Crown Point and California each the same quantity. The ore developments of the Consolidated Virginia are reported to be of a character so extraordinary that few persons are able to comprehend their full extent and value. Recent explorations, too, have led to the supposition that great as is the width of ore in this mine it will probably be found to be still more extensive in the California, as near the south line the configuration of the ground shows the beginning of a gradual expansion.

The fame of the wonderful discoveries of the Comstock has already resounded throughout the world, and well it should be, for history fails to furnish a parallel. Until these discoveries the reputation of the Mexican mines for productiveness was the highest in the world; now, however, the reverse is the case. The Veta Madre, or mother vein, of Central Mexico comes nearest, being a parallel case to the Comstock. It appears to be a similar fissure, intersecting a like formation, but it is of far greater length, and, besides, its ore deposit has been one continuous bonanza. The mines located on this celebrated lode have been regularly worked upwards of three centuries, and Humboldt and other travellers who visited it gives the aggregate yield for this period at about $300,000,000. Though the Veta Madre has been the most extensively developed lode in Mexico, it is doubtful as to whether it is the most valuable vein existing in that Republic. There are some metallic silver veins in the State of Chihuahua that are reputed, by those who have inspected them, to be richer than those of the former.

The first discoveries on the Comstock date about 15 years back, yet the product in that brief period has footed up in round numbers to not less than $185,000,000, being considerably above one-half of the three-century product of the greatest mine in Mexico. The Comstock lode turned out bullion during last year to the amount of $22,000,000, while this year's yield is estimated at $35,000,000, and next year's at $50,000,000, as has been shown above. In addition to these figures, and as a matter of general interest, I find that 56 mines on the Comstock and adjacent lodes have levied assessments to the amount of $22,414,110, and paid dividends aggregating to $47,938,500, or a surplus of $27,524,390, that the people had received in the shape of dividends over and above what the mines have cost them. There can be no denying these facts, which I have been at some pains to procure, therefore they can be relied on for their correctness. When people who speculate in mining stocks receive so large an amount as the above on the original investment, they should be pretty well satisfied with the result. The foregoing surplus has, however, been largely increased since the opening of the bonanza, for the returns just given are for the period preceding the late discoveries, and several millions have been disbursed in dividends since then. The Consolidated Virginia alone in the last three months has paid its owners nearly $3,000,000 in dividends, the two last being at the rate of $10 per share per month. There are 100,000 shares in the Consolidated Virginia. The present market price is $450 per share, which fixes the value of the mine at $45,000,000. Fabulous, yet not a fictitious value.

So much for but a portion of Western Nevada, the Eastern quarter shall speak for itself next. The above figures will however, go far to show how well founded is the claim of Nevada to be the greatest silver mining region in the world. J. D. POWER.

Tybo County, May 14. ——

MINING IN COLORADO—THE TERRIBLE LODE COMPANY.

SIR,—If shareholders will turn to the official notices published in the Journal of April 17 and May 1, and carefully compare them with the letter from Mr. Ernest Le Neve Foster in last week's Journal, they will find that we have already received such information as disposes of the attack on the direction. The notices themselves are in the usual place in the company's office, where also shareholders will find on enquiry that Mr. Ernest Le Neve Foster is not, as he asserts, a shareholder, and what is more, never has been.

London, June 9. —— A SHAREHOLDER.

THE RICHMOND AND THE ST. JOHN DEL REY MINES.

SIR,—I have no doubt that your readers, like myself, have received with no ordinary satisfaction the startling announcement that your correspondent, Mr. Westaway, whose letter appeared in last week's Journal, has "so many of his friends as shareholders in the Richmond Company that he is induced to state the reasons which lead him to the conclusion that the shares will have a still *higher* rise." It would, of course, be difficult for the shares to have a *lower* rise; and if the whole of Mr. Westaway's "conclusions" are of a similar character to those set forth in his communication it is to be sincerely hoped that his "many friends" will not be disappointed at the inevitable issue.

It does not appear to be within the ken of Mr. Westaway, when comparing St. John del Rey with the Richmond Mine, that the former is a gold-quartz mine in Brazil, and the latter a silver—or, rather, a galena—mine in Nevada, and that development has attested the permanent and improving character of the former, while just the very opposite has been the invariable result of ore deposits in the limestone formation of Nevada, its proverbial capriciousness eventuating in utter failure. Mr. Westaway's comparison reminds one of that eccentric character in the recently-introduced farce, who, labouring under the hallucination that everything can be compared with everything, traces a striking resemblance between the guano deposits in the islands of Peru and the Hebrides.

Mr. Westaway's attempt to "paint the lily" at the expense of "refined gold" has unhappily had just the contrary effect to that he evidently most ardently desired, as the St. John del Rey stock has advanced and the Richmond shares have declined.

Again, while the comparison as to the present is clearly adverse to the Richmond, as to the future—judging by the experience of the past—it is absolutely fatal; and for this most obvious reason, that while in different parts of the world well-defined quartz fissure-veins (of which St. John del Rey is a type) have been proved "to hold" in depth as well as increase in productiveness and value, ore deposits in the limestone formation (notably in Nevada) have been, at least in nearly all the American mines introduced upon the London market, treacherous and disastrous failures.

June 8. A ST. JOHN DEL REY STOCKHOLDER.

PORT PHILLIP AND COLONIAL GOLD MINING COMPANY.

SIR,—Telegrams are repeatedly sent from the manager of this company stating gold contents of the eastern and western reef, and those very rich ones, but, somehow or other, the general yield varies from 4 to 4·18 dwts. per ton only. At the office we are told that these reefs are, however, of no importance. Why, then, continue to hold out such illusory hopes in the telegrams, and why telegraph yield 8 dwts. and 18 dwts. at all if they are of no importance? A discovery of no importance surely needs no telegraphing, and people are with good reason supposed to attach importance to anything telegraphed. Such sensational messages cannot be for the good of the great body of shareholders, but only, it would seem, for the benefit of such who job the shares in the market. Meanwhile the shareholders remain for years without a dividend; but some find their dividends in the constantly varying price of between 10s. and 20s. a share.—*London, June* 3. A SHAREHOLDER.

CHONTALES—JAVALI: FACTS VERSUS FICTION.

SIR,—"Investor," in his letter of the 3rd inst., has made a calculation that the profit of the former of the above-named mines would be 1500*l.* per annum. This is a very unfair estimate, as he has only based his calculations on the returns of a portion of the year. I would refer him to the annual report, November, 1874, in which he will see that a net profit of 3589*l.* 15s. 2d., besides a substantial amount carried to construction account, had been made with a crushing power of 24 stamps only, ore producing a low yield of gold, and an interruption on the question of labour, arising between the Governments of Nicaragua and Costa Rica, the neighbouring State. The present is the dry season, and interferes to some extent with the returns of both mines, steam having to be used instead of water-power in driving the stamps, which at the present time is only equal to the driving of 24 heads; the wet season, which generally sets in during the month of June, will enable us to drive 36 heads and the pair of pneumatic stamps, equal to about 7 of the ordinary ones, which we are given to understand will be completed by that time; the crushing power will then be equal to 43. I leave it to the public to form their opinion, and draw their own conclusions as between my statement and that of "Investor." For the information of a Javali admirer I would state that our company was formed in 1870, that the shares have always been quoted much higher than the Javali, excepting for the period of about a month or so this year. The quotation at the present time for ours is higher than that of the Javali.

I cannot but think there has been an unfairness on the part of your correspondents in the manner in which they have drawn comparisons between the sister mines. I may add we have no debentures (the Javali have); also that our directors' fees are 250*l.* per annum, as against 500*l.* paid to the directors of the other mine; we feel great confidence in our directors and the economy exercised by them in our home expenses. In addition, there are 12,542 shares; a call of 5s. per share is available at any time it may be required, and 5000 unissued shares. W. B. P.

JOHN BAGNALL AND SONS (LIMITED).

SIR,—The position of this company is at the present time occupying the attention of the general public as well as the persons who are shareholders in it, and I think any information in reference to it will be gladly received by the public. We learn by the various reports, &c., that it is proposed to take proceedings against the vendors and promoters with a view to get back the amounts (or portions of them) which have been received by various persons as commissions, or for other services rendered.

As an original shareholder, I claim the right to have a voice in this matter, and I must say that as we had a re-valuation of the property or most of it, and found the value to be considerably more than we agreed to pay for it, I cannot, for the life of me, see how anyone can say we were taken in. We agreed to buy at a price, and having bought, we sound our purchase, and find we get a good horse for our money, and also a good cloth to cover him into the bargain. I cannot, therefore, understand what we are going to obtain by the proposed lawsuits we are going into. We must look a little beyond the prospect of a present dividend; and soon the time will come when our debentures will be required to come into the market; and depend upon it, if the proposed law proceedings are commenced, we shall be still found fighting when we should have been, for our benefit, quietly improving our position, and preparing for nearly half our capital being transferred from a mortgage into the general lot of the shareholders, or a near as possible to that. If we were to imitate the Kilkenny cats we cannot blame ourselves if we come to the same end. When we look at the various balance-sheets of companies similar to our own, and find that losses have occurred during the past year—in many cases a great deal worse than ours—it must be admitted we are not so bad as some would wish us to be. We have a management which has carried on this great concern for several years, and not made a single bad debt. I think, therefore, we should pause before taking such steps as are proposed by the investigating committee's report. Once we get into the hands of the lawyers, woe betide us; it may be years before we get free from them; and who shall decide, when six on one side and half-a-dozen on the other are equally certain of opposite opinions?

I feel convinced that the resolution vesting the authority to go to law in the hands of the committee was passed in an unguarded moment, and that the majority of shareholders are not in favour of it. Let us know fully what the terms of compromise are, and consider if a bird-in-hand is not worth two in a thick bush; rather receive the best we can get, and by good management and, we hope, improved trade, try and recover ourselves, rather than run the risk of getting a barren victory, or involving the company in possible liquidation.

It behoves all shareholders who not favour the resolution to go to law to let the directors know publicly they are opposed to it. If we cannot have another meeting to again consider the matter, I would suggest that a form be sent to each shareholder asking for it to be filled up, stating if in favour or otherwise of the proposed law proceedings. A great amount of responsibility rests upon the committee, and the power by which they act was voted, to my mind, in a too hurried manner, and without proper [explanations of the reasons and causes for it, and the results to be obtained by it. I, therefore, again say to the committee, "Pause," and let us have full and complete explanations of the expected results, before committing us to a serious expense, and a, perhaps, possible winding-up of the company before any results should be obtained.

Wolverhampton, June 4. —— JOHN HARLEY.

METROPOLITAN GAS MONOPOLY.

SIR,—The letters on this question, which appeared in the *Times* of May 22, from Mr. Eyken, a director of the Chartered Gas Company, and the secretary of the Imperial Gas Company, the two largest companies in the metropolis, seem to require some notice. Mr. Eyken says that his company is under such supervision and control as to secure the requisite purity and illuminating power of the gas that commissioners fix its price, and that an auditor certifies the accounts. Under these guarantees Mr. Eyken seems to consider that the system works well, and that the public ought to be satisfied; but he says nothing of the system itself under which these arrangements are carried out, and it is this which affects the public, and which they have strong reasons to find fault with.

The present mode of connecting capital and dividend is wrong in principle, and has added considerably to the price of gas. Under this system one company can charge 5s. per 1000 cubic feet, whilst another is satisfactorily remunerated by charging 3s. 4d., although both draw their supply of coal from the same district; the same market for labour and materials is open to both, they have to distribute the gas over similar areas, and there should consequently be little if any variation in the proportionate expense. The result of this system is that the company, having by virtue of its monopoly the power of charging a price that may be necessary to bring up the dividends to the fixed amount, has no inducement to limit capital, but, on the contrary, is encouraged to increase it extravagantly.

The published accounts of the gas companies do not supply all the figures necessary to enable me to state the relative proportion of expenditure to consumption of gas, but it varies from about 4*l.* 10s. to 8*l.* per ton of coal consumed annually. There is no sufficient reason for this great difference except extravagant expenditure or improper treatment of capital. Speaking generally, works can be constructed at the same cost by all the companies; the outlay in mains will be greater in some districts than in others, but it is impossible it should be so much greater as to account for the difference above mentioned. Taking 4*l.* 10s. as the capital expended per ton of coal used for small works, 4*l.* may be taken as the proper expenditure for the supply of the whole metropolis.

The capital of all the companies may be taken in round numbers at 10,000,000*l.* The quantity of coal used in 1873 was 1,430,000 tons; therefore, if 4*l.* be taken as the proper rate per ton of coals, the capital should be 5,720,000*l.*, or (say) in round numbers 6,000,000*l.*, showing a needless outlay of 4,000,000*l.* That I am not understating the necessary expenditure is shown by the fact that since 1863 the smaller companies have supplied the increased consumption by an expenditure of 3*l.* 10s. per ton, but during the same time the larger companies have expended 8*l.* per ton, hence the high price of gas. The obvious remedy will be apparent if we compare the case of a gas company conducted as our metropolitan companies now are, with the case of a supply which might be provided by a municipal authority.

Take the case of a company; it would start with a capital of (say) 100,000*l.*, and the consumers would be charged such a price for their

gas as would produce an income of 10*l.* per cent. Year by year the shareholders would divide these earnings; there would be no reserve made for the renewal of plant, which would be worn out and wholly exhausted in (say) 34 years. The company would then come to an end so far as the original capital of 100,000*l.* was concerned. If it were to continue the supply, fresh capital would need to be raised for the purpose, for the first 100,000*l.* would have disappeared. A second capital would be raised, and if dividends had to be provided for both the old capital and the new, obviously the price of gas must be raised. The existing companies have not, as a matter of fact, allowed the whole of their original capital to disappear in this way, but they must have added to their 10 per cent. dividends between 2 and 3 per cent. for renewals, making the total charge from 12 to 13 per cent.

Compare this state of things with what would have happened if the supply of gas had been provided under wise municipal arrangements. A corporation would easily have raised 100,000*l.* at 4 per cent. The charge on capital at the same rate as that charged by the gas company would be 10,000*l.*, of which 4000*l.* would be absorbed by interest for the first year, but reduced as the capital was paid off, leaving a balance of 6000*l.* a-year to go in liquidation of the debt. In 17 years the whole debt and interest would be paid, and the corporation would have the works and property wholly free from debt. A few figures will show the actual results:—

A gas company's charges on a capital of 100,000*l.*, at 10 per cent., will in 34 years amount to	£340,000
The renewal of capital will amount to	100,000
Total	£440,000
A public body would have to pay for interest on a capital of 100,000*l.*, which is being reduced annually by liquidation.	35,360
The liquidation of capital will amount to	100,000
Total	£135,360
Taking the average charges made by a gas company at 8 per cent. for dividends and interest on money borrowed and renewal, the charges will be	£372,000

This illustration points to the obvious remedy for the mischief that has grown out of a vicious system. The management of the gas supply should be put into the hands of a commissioner, as suggested indirectly by the Board of Trade. We should then no longer have to pay on too large an expenditure of capital, or the absurd cost of distribution, caused by mains belonging to different companies being carried under the same highway, leakage would be lessened, and the price of gas reduced. The companies have the right to be fairly treated, as, however extravagant their investments may have been, they have been made with the sanction of the community as represented by Parliament. C. G. CLEMINSHAW.

Westminster Chambers, June 7.

WELSH "MINING" NEWS.

SIR,—Having resided every summer for some weeks near Aberystwith, I find there is a firm belief among residents there that the London and other shareholders in the lead mines near there are terribly imposed upon by some well-known and notorious agents: not only by false reports, but by taking miners to till their small farms. Letters and *jeux d'esprit* like the one enclosed often appear in the local papers, and are never contradicted. Could you find room in the Journal for the enclosed description of "All Fools' Level," cut out of the *Cambrian News* of May 14? it might thus be the means of calling shareholders' attention to abuses which certainly exist in this locality.—*Towyn, June 9.* A READER.

ALL FOOLS' LEVEL.—Since January last work has gone on briskly, and we have now got the main engine shaft down 10 fms. below the 19, and we shall soon begin to drive a level on the course of the lode. The prospects of the mine are splendid, and the ground looks very favourable. I now farm 60 acres of ground, which the miners cultivate for me. We want a new wheel and a lot of new machinery of different kinds, and after awhile I shall put on a lot of additional stopes, and shall samples 50 tons of leads as soon as possible. There has been a great discovery of lead about 10 miles from here, and there can be no doubt we are on the same vein or something like it, but we have not struck the vein yet.—JOHN MCBLARNEY, September, 1855. [The reports in the interval were much the same.]

ALL FOOLS' LEVEL.—Special report to the All Fools' Level Mining Company:—'GENTLEMEN,—The property which I came down to inspect at the request of your company is one of the most promising in the county. About 60,000*l.* has been spent in erecting machinery and opening up the ground, and from what I hear there is a splendid vein of lead ready to be worked as soon as the water is got out. The indications of lead are good; in fact, I may say I never saw better. The pumps are not strong enough, and one of the water-wheels is too small; but with these deficiences rectified, and some new patent dressing machinery, there can be no doubt the mine will pay large dividends. Owing to the water in the working, I was not able to inspect the various levels, but when the mine was stopped two years ago it was just on the point of success, and Capt. John McBlarney, a most honest, and truthful, and experienced, and trusthworthy man, in his very last report, wrote as follows—"I shall sample 50 tons of lead as soon as possible." This is conclusive that the property is a valuable one. If you think it necessary I will make a closer inspection of the workings.—WM. SPECIOUS, November, 1857.

A period of 10 years elapses before we hear anything more of All Fools' Level, and then it is a newspaper paragraph as follows:—

MINING ENTERPRISE.—Our readers will be rejoiced to hear that the celebrated mine which made such enormous yields of lead 14 or 15 years ago under the able management of Capt. McBlarney, has been sold to a London company, and will be vigorously worked.

The first report that appeared after the new company had got to work, was as follows:—

ALL FOOLS' LEVEL.—We have now got the pumps to work, and in a short time expect to have the workings clear of water. Several dressing-floors have been put down and a strong steam-engine. I am quite ready to commence underground work.—RICHARD BALDERDASH, December, 1868.

There is a long list of reports telling of breakages and mishaps of different kinds stretching over a period of five years. Much stoping and driving and such like was done, but no lead was seen, and at last the shareholders engaged one Thomas Trueman, who was sent off to All Fools' Level Mine without giving Capt. Balderdash notice, and the consequence was that he did not have the pleasure of making that gentleman's acquaintance, as he had not been to the mine for a fortnight. Mr. Trueman did his work thoroughly, and the last paragraph of his report was as follows:—

ALL FOOLS' LEVEL.—In conclusion, gentlemen, I may say that there is no sign of lead in any part of the workings, and to spend anything in attempting to discover ore in this mountain is purely speculative mining, which if successful would be no profit to you, as there is a system down here which is driving legitimate mining out of the field.—THOS. TRUEMAN, August, 1873.

From time to time All Fools' Level appears in the paper as having been purchased, but no one has yet been able to work the oracle since Capt. Trueman's report. If these reports are admired, perhaps I may start as a regular contributor to the mining papers.—*The Coast.* PERRY WINKLE.

MINING AT COMBMARTIN, NORTH DEVON.

SIR,—Is it worth while to be at all accurate in making one's calculations and setting them before the public concerning the prospects and practice of mining, or is it supposed that your readers voraciously gulp everything which is set before them? It may be immaterial, but no less interesting, to know on what basis Mr. John Treweeke founds his calculations respecting two lodes at Girt, which he states are 3 fathoms apart at the surface, and dipping towards each other, one at the rate of 5 ft. and the other of 2½ ft. in a fathom, making together an inclination of 1 fm. 1 ft. 6 in. to 1 fathom of perpendicular depth, notwithstanding he concludes that the junction of these lodes will not take place until 6 or 7 fms. deep. Surely it is worth a thought on the part of a descriptive writer to aim at something like accuracy. If the data he has given be correct these lodes should meet, and either conjoin or intersect at 2 fms. 4 ft. 3 in. and the fraction of an inch below the surface, between which and 6 or 7 fathoms there is a considerable difference. This loose way of stating facts and drawing conclusions is too prevalent in mining, and does more harm than many people seem to be aware of. It ought, therefore, to be scrupulously guarded against, especially as it tends to lower the British miner in the eyes of foreigners.

CORNUBIENSIS.

MINING IN MID-CORNWALL.

SIR,—As very little information as to mines and mining in this district finds its way into the Journal, I propose to send you an occasional letter on the subject, which may be of interest to some of your readers.

In times gone by this part of the county possessed many valuable mines, and there are two or three of great promise at present working; speaking generally, however, things are undoubtedly at a very low ebb, and there does not seem to be any immediate probability of an improvement. The reason that matters are as they are is not, I venture to say, owing to the low price of minerals; it must be looked for in a different direction altogether. With one or two noteworthy exceptions, there is no *legitimate* mining enterprise in the district; there are plenty of jobbers in setts, but *bona fide* mining is scarcely represented, except by strangers. Where mining is carried on in a legitimate manner, and the proprietors look after their own business, success is almost invariably attained, sooner or later; but when it is left to the agents there is, as a rule, only one result, and that is utter failure; not, as I have said, on account of the poverty of the mines—because they hardly ever get a fair trial—but because a "company" is generally looked upon as a proper subject to "bleed" in every possible way.

On another occasion I will give you an example or two of the "bleeding" process, and a few hints which will, perhaps, enable investors to discriminate between those who carry on their mines in a legitimate manner and those who get up companies, not that the setts may be worked, but that there may be little pickings for "one and all," and a chance of repeating the process with the same property under a new name.—*Bodmin, June 9.* LOOK-OUT.

MINE AGENTS' REPORTS—ROMAN GRAVELS.

SIR,—Some weeks ago you were kind enough to insert a few lines from me in reference to the mischief done to the mining interest by the unreliable character of the reports which the agents issue from time to time. I cited two examples, and as one of them continues to furnish evidence of what I then alleged I ask permission to revert to it. In the report of Roman Gravels for 1874 Capt. Waters says, under date April 10, "Before this year is out I expect to have the new south engine-shaft down to within reach of the great and rich lode at and on both sides of Corfield's." Then he adds, "There will be no difficulty in raising our returns to 300 tons a month." Will it be believed that this, six months nearly after date, is all unfulfilled prophecy? I had, indeed, hoped, both from what Capt. Waters had stated in his weekly reports, published in the Journal, and from the report of the directors, dated April 24, that the new shaft would have been finished last month. But May is gone, June is come, and last week Capt. Waters had not a word about either shaft or winze. Such delays and disappointments are not creditable to the board or their agent, and help to bring mining investments into utter disrepute. But for this what could keep Roman Gravels at the present figure? With anything like effective management they ought to pay 8s. 6d. to 10s. a quarter, and would rise to 18*l.* or 20*l.* at least, but whilst the reports turn out so incorrect, and wide of the mark, there cannot be anything but distrust in the public mind. A HOLDER OF MORE THAN FOUR HUNDRED MINING SHARES.

[For remainder of Original Correspondence, see to-day's Journal.]

Meetings of Public Companies.

IMPERIAL BRAZILIAN COLLIERIES COMPANY.

The half-yearly general meeting of shareholders was held, on Monday, at the offices of the company, Cannon-street,

Mr. JOHN O. SURTEES in the chair.

Mr. THOMAS JOHNSON (the secretary) read the notice calling the meeting. The report appeared in last week's Journal.

The CHAIRMAN said he had been asked to take the chair, and he had done so, but he was sorry he could not say that he did it with pleasure, but, unfortunately, the circumstances connected with the working of the company had been of a nature to prevent the directors submitting a better report on the present occasion. If the result was disappointing to the shareholders it was much more so to the board, for he could assure the meeting that the directors had conscientously devoted an amount of time, labour, and trouble to pull the company round which he should think had not been equalled by the directors of any other company in London. The directors had all a considerable stake in the company, and had used every exertion to try and get things into a better state than now, but he should not be doing his duty if he did not put conscienciously and clearly before the shareholders the exact position of the company, in order that the shareholders might aid the board in bringing about a different result. He would state what the directors had done since they last had the honour of meeting the shareholders. At the time of the last meeting the directors were trying to get out 786 shares, in order to have the means of boring for a deeper seam, which he felt convinced might still save the company, and that was also the opinion of gentlemen on the other side, because Mr. Scott, in a letter just received by Mr. Bower, stated that a better appearance might be put upon the company if they could bore for a deeper seam. Well, the directors tried to get out the 786 shares, and they made an almost house to house canvass, and saw a large number of the shareholders personally, and impressed upon them the necessity of doing something, but he was sorry to say that many gentlemen who were in the room at the last meeting, and applauded the scheme for getting out the remainder of the shares, refused to take any more, so that out of the 786 shares the directors only succeeded in getting out 308. The directors at two or three board meetings discussed whether it was not advisable to withdraw the application for more money, but they had advices from Mr. Tweedie, the manager out there, which induced them to go on. The directors were bound to believe implicitly what Mr. Tweedie told them, and the directors had no hesitation in accepting as true that which Mr. Tweedie stated. Now, in one report Mr. Tweedie stated that the coal continued to improve in quality on the dip side; and in another report he referred to the great desirability of obtaining boring tackle, and boring for the rich seam which was confidentially believed to exist under the present seams. The directors sent round to various companies, and ascertained that a proper diamond boring-tackle would cost 2000*l.*, and, of course, the 308 shares which had been subscribed for would not furnish sufficient capital for the purpose, and there was no alternative but work down. As regarded the coal itself, the directors knew that sulphur, being volatile, rose, and the nearer the coal was to the surface the more sulphur there was in it, but the deeper they went down the more the coal was compressed, and the less sulphur there would be, and the directors had reason to hope that the sulphur would decrease. The directors, therefore, decided to apply the money which had been subscribed in developing the present seam; there was no other alternative left for them that they could see. In furtherance of that they had since September sent out 2500*l.*, but the directors only sent it out after most anxious consideration and discussion. When Mr. Tweedie telegraphed for 2000*l.* they sent him 1000*l.*, with reiterated cautions impressing upon him that the company had very little money left, and he must accept what they had to spare, and make the best use he could of it. They kept back about 1500*l.* for three months for three purposes, first, that they might have a small sum of (say) 500*l.* to send him in case of necessity; secondly, that they might have 500*l.* to meet the debenture interest falling due in May; and, thirdly, to have 500*l.* to meet other necessary things, such as London office working expenses, and so on. They endeavoured to reduce the London working expenses in every way, and in the last six months they had been reduced to 460*l.*, making 660*l.* less than in the corresponding half of the previous year. Out of the 1500*l.* left the directors had, as he had mentioned, paid the greater part of the debenture interest, and those who had not received the debenture interest could receive it, as the money was in the bank. Every expense had been reduced in the office—salary of secretary, office rent, &c. But there was an old saying that misfortune never comes single, and such was the case in this company. It happened about three weeks ago that Mr. Tweedie sent a pressing letter, asking for more money, stating that unless it was sent at once he must stop operations. The directors, seeing the necessity for prompt action, paid their last 500*l.* into Maua's Bank to the credit of Mr. Tweedie, and ten days afterwards the bank stopped payment. There was no suspicion whatever attaching to the bank previous to its stoppage, and the directors had always before paid the money through the same bank, the cheque was paid in as usual, and when the directors came one morning they found the bank closed. The directors sent the secretary on to the bank with a notice that it had been paid in for a specific purpose, and, therefore, the bank held the money as trustees, and that it ought to be returned at once, but the bank sent word back that they could not consider it any more than any ordinary payment. He believed there was hope that Maua's bank would resume payment, in which case this company would get everything back. The directors had had an interview with the Brazilian Ambassador, who said that individually he could do nothing, but that as the Emperor was a very enlightened man, and was perfectly aware of the immense importance of finding coal in Brazil, and also of working the iron ore, which existed in great quantities, he had great hopes that if the directors would send over a petition to the Emperor, stating the amount of money which had been spent and the result obtained, and asking either for a subsidy or help in some other way, he had great hopes that if this was done the Emperor would entertain the question. The directors had, therefore, sent out a petition to the Brazilian Government, and also a request to the Provincial Government, asking the Imperial Government to give the company a grant, and the Provisional Government to take some of the remaining shares, as they had done before. Mr. Jones had put the petition before the Imperial Government, and the directors were now awaiting the result. He had seen the Emperor, who seemed to think well of the proposal, and as far as he could would give his assistance. But the application to the Provisional Government, he was sorry to say, had not been so successful. A trial had been made of the coal which was now being found, but it burnt with a great deal of ash, and a greater quantity was required of it than of English coal; but Mr. Tweedie, who had been most persevering to promote the success of the company, considered that some little prejudice might exist in the minds of parties out there, and he succeeded in getting a second trial applied for. The result of the second trial had been received here; it was long, and he need not go into details, but he might tell them that again the trial was not successful—that was to say, the quantity of ash was so great that they could not work it satisfactorily, and could not recommend it to be used in the Government boats. But all the reports which the directors received led them to expect that further borings would lead to success. With the view of curtailing the expenses in every possible way the directors had, though with very great reluctance, to dispense with the services of Mr. Scott, and Mr. Scott had written a most kind letter to say that, although he was about to cease his connection with the company, he would most gladly do everything in his power to promote its welfare. (Cheers.) The directors had had samples of the coal and fire-clay sent over to this country, and they arrived about three weeks since, and portions of them sent to the Royal School of Mines, and there certainly was a large quantity of ash, sulphur, and water—in fact, the coal, as coal, could not be compared to English coal. As regarded the fire-clay, it turned out of excellent quality, and, no doubt, something could be made of that. In his last letter Mr. Tweedie says he does not consider that anything can be made of the present seam of coal, and therefore it was useless wasting any more money upon it, and that the best plan to pursue was to try for another seam under the present one, and he has got reasons for hoping and believing that the boring for such seam would be successful. Of course, this result was disappointing, but the directors had done all they possibly could. The chief fault of the coal was sulphur, and that fault would not be found in a deeper seam. The present position of the company was this—they had still between 900*l.* and 1000*l.* of liabilities. The works were stopped, and everybody discharged, with the exception of three or four employees whose services could not be dispensed with. Some little expenditure must be incurred to keep the mine going, because if it was stopped altogether the concession might be lost. Then there were the expenses of the London office, and those were all the liabilities. Against that there was 500*l.* claim upon Maua's estate, which he believed to be nearly all, if not entirely, good; there was 350*l.* in the bank to provide for the remainder of the interest on the debentures: and about 400*l.* in Mr. Tweedie's hands. So there was about 1400*l.* assets, against 1000*l.* liabilities. Then there were several miles of railway in excellent order, and the engine-house, workmen's houses, engines, trucks, turning-lathes, steam-hammer, and a large quantity of fire-clay, and some other things. There were 10,000*l.* of first charge debentures. He went on to refer to the immense importance to Brazil of a large and constant supply of coal from its own coal mines, and said that no doubt the Emperor, and also the Government, were fully alive to its importance. He had heard that another large company were going to start working for coal in the neighbourhood, so thoroughly did the conviction exist that coal was to be found. Of course, this company stood in an immensely better position than any other company, because if coal was to be found this company, from the extent to which its workings had already progressed, could find it at a tithe of the expense to which other companies would be put. The important point was as to what was best to be done. It seemed to him that there were two alternatives—one was to raise money upon a second mortgage, and the other was to sell the property to the Government. Had the present board come in a year or two ago, when funds were at the disposal of the directors, he believed that the company would have been brought to a different issue.——Mr. LAITY seconded the resolution.

Capt. FOWLER, after one or two remarks from shareholders, read extracts from a letter from Mr. Scott, in which that gentleman expressed a confident belief that a seam of good coal would be found beneath the company's present seam.

A SHAREHOLDER asked what would be the expense of boring for the new seam?

The CHAIRMAN said it was thought that for about 5000*l.* they could satisfy themselves of the existence or otherwise of the seam beneath the present workings.

Mr. BOWER, who is largely connected with gas works in Brazil, also with the Rio Grande do Sul Steamship Company, expressed his conviction that the Emperor and Government of Brazil were so thoroughly alive to the importance of developing these coal fields that they would see their way to granting some assistance to the company.

The CHAIRMAN, in answer to questions, said that there was no mortgage on the property beyond the debentures. The price of English coal out there was generally about 80s. per ton, so that there was an enormous margin for profit on coal worked in Brazil.——After various questions had been asked and replied to, the report and accounts were unanimously adopted.

Mr. PIKE said he was sure he was expressing the feeling of all the shareholders when he said they had never heard a more full and clear explanation of the affairs of a company than had been given by the Chairman that day. He was sure the directors had done all in their power to promote the welfare of the company, and the shareholders should show their confidence in them, and support them in every possible way. He moved, "That having considered the report and balance-sheet, and heard the explanation of the directors, the shareholders hereby approve their proceedings, and authorise and request them, in conjunction with a committee of shareholders, to be now appointed for the purpose, to take such steps as they may deem expedient for raising the funds necessary for boring, and otherwise extending the company's operations, or to adopt any other measures which they may, under the circumstances, consider necessary or desirable. That a committee, of whom two shall be a quorum, and consisting of Messrs. D. H. Goodsall, Ernest Carroll Ward, and Henry Hallett Maude (with power to add to their number), be hereby appointed to confer and advise with the board, and to act in conjunction with them in carrying this resolution into effect."

The resolution was seconded, and after a short discussion, in which Mr. Maude, Dr. Goodsall, and other gentlemen took part, was carried unanimously.

On the motion of Dr. Goodsall, a resolution was passed requesting the two directors who reside in the country to retire from the board, Dr. GOODSALL said he made the motion with much regret, as he believed that Mr. Bower and Captain Fowler, the two gentlemen who would be affected by the resolution, were most efficient and useful members, but the object was to save expense in every way possible.

Mr. BOWER said that he fully approved of the resolution, and indeed he and Dr. Goodsall had really anticipated a suggestion which he was about to make himself. He reciprocated the kind feeling with which the resolution was moved, and said that, although no longer a member of the board, he should be happy to render all the assistance in his power to the directors. (Cheers.)

Capt. FOWLER fully endorsed the remarks of Mr. Bower.

A cordial vote of thanks was then passed to the Chairman and directors, and the meeting broke up.

CHAPEL HOUSE COLLIERY COMPANY.

A meeting of shareholders was held at the colliery on June 4, Mr. A. G. BROOKES in the chair.

The notice convening the meeting having been read, and the report and accounts being taken as read,

The CHAIRMAN said: Gentlemen, as the report and accounts have been in your hands some time you may, perhaps, like to take them as read, but the secretary shall read them if you wish it. You have had our report before you, and have no doubt considered it in all its bearings, and I do not know that it is really necessary that I should trouble you with more than a few remarks. I propose, however, rapidly to run through the report and accounts, and, while endeavouring to be as explicit as possible, I will not detain you longer than necessary. The result of the past operations of the company will, I think, satisfy all of us. Through a period of stagnation of trade when some of the best channels for the sale of coal have been closed, we have not only sold as much as we could conveniently raise, but we have purchased coal in large quantities to supply our customers. Our own output has exceeded an average of 6300 tons per month, and this quantity has been added to by purchases varying from 1000 to 3000 tons in each month. We consider this a most favourable feature in our business, for not only do we make a profit on the turn over of coal purchased, but it affords a proof that when our output becomes larger we shall be able to find customers readily. This is a matter of no small importance to you if, in conjunction with the consideration of this point, you bear in mind the fact that we have experienced no difficulty in obtaining for what we have sold prices which pay us handsomely, and which leave a very large margin for a possible, though very improbable, fall in the price of coal. While upon this subject I may as well refer to the expected increase in our raisings. You know that we are now engaged in sinking two new pits to the deeper seams, which contain a superior quality of house coal, and the dimensions of these pits (15 ft. and 16 ft. diameter respectively), and the generally massive character of the new works which you have viewed for yourselves, show that when we commence working we mean to do so in earnest. A certain amount of new machinery is required, not only for the sinking but also for the future working of these pits, and we have been very fortunate, thanks to the foresight of our manager, in securing the greater part or all of the machinery on exceptionally favourable terms. On the engines we believe we have saved some 40 or 50 per cent. of the amount which they would have cost us had we bought them in the ordinary way. We have made arrangements for manufacturing all the bricks we require for the erection of engine-houses, and the bricking of the shafts, &c., and we are now able to turn out some 60,000 bricks per week, at a cost of 15s. per 1000, which if purchased would cost us, on an average, from 30s. to 35s. per 1000. You will observe that we have increased the number of our railway wagons. The result of our deliberations on this subject was that if we had more rolling stock we could raise more coal, and thus make more profit. The 80 wagons purchased do actually help us to increase the income to such an extent that we can not only pay the yearly instalments of purchase-money, but we can calculate upon a surplus to add to our ordinary profits. We shall, probably, require a larger quantity of rolling-stock when our new pits are completed and at work, but on the same principle we shall so arrange that the acquisition of it will prove a source of profit rather than of expense. Thus you will possess a large plant which, though taking nothing from you, will actually put money into your pockets. With regard to the new pits, we have told you that they are being sunk at the rate of about 5 yards per week. This rate of progress may be hastened or retarded by the nature of the strata through which we have to sink, but we believe that the present average may be calculated to continue until we have succeeded in reaching the lower seams, which is at a depth of about 400 yards from the surface. This work will, of course, entail expenditure, and I propose to enter into that subject; but, however, as it is a matter of accounts, and belongs to the future, it will, perhaps, be convenient here to take a short survey of our accounts for the past. The colliery working account appears to me to require little or no explanation. It has cost us a certain amount to obtain so much coal, which has realised so much. On the credit side, under the heads of "flats and vessels," "extra earnings," you will see that the sum of over 3000*l.* has been earned. This arises from the fact that when the vessels are not required for the company's business they are readily let to other coal shippers, and it must be considered a very favourable feature of the accounts, for it proves that the plant in this respect is amply sufficient to deal with the larger output of coal which we look for. In the next, or profit and loss, account, the "interest on mortgage" is the first item. This sum represents the total amount of interest paid and accrued on this account. The amount written off pitwood represents half the total expenditure for this item. Our manager assures us, and we have every reason for relying on his sound judgment, that the pitwood hitherto purchased will last for considerably more than two years, and that we shall not have to spend anything like the same sum in future years. We, therefore, thought it only equitable to the present shareholders to charge in these accounts a just proportion of the whole. The total sum paid for wagons was 1755*l.* 6s. 10d. To allow for wear and tear we have written off one-tenth of this sum, which when the accounts were made out and submitted to the auditors we believed to be a fair proportion. Further consideration, however, leads us to think that a better system may be devised for clearing off this account; and we propose in the immediate future to write off a larger amount, and gradually reduce the sum so deducted as the age of the wagons increases and they become less valuable. Under the head of "general charges" the sum of 181*l.* 16s. 6d. for audit account covers practically three audits—two in Liverpool and one in London. A well-known firm of London accountants of high standing and reputation were appointed auditors of the company, and as the nature of our business required that the accounts should be examined in Liverpool as well as in London, considerable extra expense was involved in travelling and hotel charges, &c. The amount paid for audit is, however, large, and your directors think that some change is desirable. This is a matter resting entirely with yourselves, and upon which the board will

not endeavour in any way to bias your minds, but in watching your interests, as is our duty, we must suggest some change, and when the matter comes before you presently I will give you our views. The next item is the London and general management. The amount for directors' fees requires no explanation. The London business has been carried on as economically as was consistent with efficiency, and when it is borne in mind that the 476*l*. 10s. 6d. includes the cost of all the books and printing—which I may tell you are at the starting of a company serious items, besides all office expenses, you will, I think, agree with me that the amount is a very reasonable one. After allowing for all expenditure fairly chargeable against the accounts submitted to you, and after paying dividends at the rate of 15 per cent. per annum, we are enabled to show the very satisfactory result of a balance of over 11,000*l*. to the credit of profit and loss. We consider the dividends of 15 per cent. ought to be looked upon as a thoroughly satisfactory and ample return, and we recommend you to assent to the appropriation of this sum for working capital, which would be the same thing as keeping it in reserve. We now come to the capital account. You will observe that the shares issued stand for 93,435*l*. This was the capital issued to March 31, of which only 20*l*. remained unpaid. More capital—6350*l*.—has been issued since that date, making the total 99,785*l*., or nearly 100,000*l*., and it is proposed to limit the share capital to this amount. The first item on the other side refers to the purchase of the property, showing the amount paid, and the amount of the mortgage. The second item shows the amount paid off this mortgage, and I may say that since the balance-sheet was made up a further sum has been paid on this account. The expenditure for new works consists entirely of wages for sinking the new pits, bricks and wages for the erection of the engine-houses and for walling the new shafts, and the machinery required for the new works. You have had the opportunity of seeing the property, and I think you will feel that everything is being done in a business-like way, and with prudence. Our machinery is superb—in fact, I may safely say that you would not find in the whole district finer engines than those which we have lately bought. Having now gone very fully into the accounts, I will as shortly as possible take up the thread of the report and lay before you our views for the future. I have pointed out to you that only about 100,000*l*. of the share capital has been issued, the balance unallotted being about 40,000*l*. If we issue these unallotted shares we shall increase the present actual capital in such a form that the holders of the additional 40,000*l*. worth of shares will reasonably expect for their money a return equal to that which you receive in the shape of dividends. It will become necessary to increase our funds in some form for the purpose of assisting in paying off the present mortgage, &c., and for meeting the outlay necessary for the full development of the property. The question, therefore, arises as to the manner in which we can best raise these funds, and—as we have mentioned in the report—we are clearly of opinion that an issue of debentures to a reasonable extent will exactly meet our requirements. In the first place, the security of a debenture bond is looked upon with favour by many who prefer a certain and fixed rate of interest to a probably larger but possibly fluctuating one. Hence we can undoubtedly obtain money on debentures at a rate of interest much lower than your shares should give you. In other words, we can get what we want more cheaply by issuing debentures than by placing the unallotted shares. Another definite advantage—as pointed out in our report—is the temporary nature of capital raised by debentures in contradistinction to the necessarily permanent character of capital represented by shares. It must be borne in mind that a part of the sum proposed to be raised by debentures would be devoted to carrying out works which should very largely increase our profits, and out of these greatly augmented profits we should be able rapidly to extinguish the debenture capital, and should have our income (increased by it) free for the augmentation of dividends. I have already trespassed too much upon your attention, and I need only add that the most anxious and careful consideration has led us to the conclusions which I have laid before you, and communications from some of our largest fellow shareholders show that they concur in our view. We are actuated only by a desire to promote the interests of the company, and we believe that the result of our deliberations will have your cordial approval and support. The opportunity you have all had will have enabled you to satisfy yourselves that what we have done has been done well, and that we are still doing the best that can be done, and with your support we have no doubt that we shall make the company a most successful one, and its shares much thought of and sought for.

After some conversation, in which the policy of the directors was reviewed and heartily supported by the members present (representing three fourths of the capital), the directors' report and the audited accounts were adopted and approved; the retiring directors were re-elected, and Mr. Holt, of Liverpool, and Messrs. Johnstone, Cooper, Wintle and Co., of London, were appointed auditors.

The meeting was then declared extraordinary, and the following resolutions were unanimously passed:—

1. That clause No. 11 of the Articles of Association of the company be rescinded, and that the following be substituted in lieu thereof.

11. The transfer books may be closed from time to time and at such times as the board may determine, not exceeding in the whole 30 days in each year.

2. That the following clause be added to and form part of the Articles of Association of the company:—

49A. It shall also be lawful for the company in general meeting from time to time to borrow at such rate of interest and in such manner as such meeting may determine upon any mortgage, debenture bill, note, or other security, such sum or sums as the company shall think fit.

Cordial votes of thanks to the directors, Mr. Loughran (the manager), and Mr. Harrison (the secretary) brought the meeting to a close.

CARDIFF AND SWANSEA COAL COMPANY.

An extraordinary general meeting of shareholders was held at the Cannon-street Hotel, on Tuesday,—Col. SHAKESPEAR in the chair.

The usual preliminaries having been disposed of,

The CHAIRMAN stated that in September last, when he undertook the duties of Chairman, he had formed opinions exceedingly adverse to Mr. John Cory's management. Having laid them before the board, he was requested to communicate with him, in a way as little hurtful to his feelings as might be, that the board wished him to discontinue interfering with the Pentre Colliery. No reply was received, but Mr. John Cory afterwards seemed, with some set purpose, to interfere more than ever. The prospectus stated that about 90,000*l*. would develope both the Resolven and Pentre properties to a daily average of about 2600 tons coal. Mr. Yeo expressed himself perfectly aghast at the enormous expenditure at Pentre. In the early part of November, 1874, at the request of the board, he (the Chairman) endeavoured to investigate the affairs of the Pentre Colliery, but was met with every obstruction. Mr. John Cory and Mr. Thomas Thomas, paid officers of the company, refused absolutely to be interrogated. At the same time Mr. William Thomas, the company's mining engineer, and Mr. Thomas Thomas, were instructed to make separate reports to the board on the expenditure at Pentre. They both came to the same conclusion, that up to the middle of November about 67,000*l*. had been spent on capital account at Pentre. Mr. Wiliam Thomas added that the primary cause of the enormous expenditure was due to the dilapidated state of the colliery at the time of the transfer, and to the most inordinate desire for a large output at any cost. He was under the impression that matters were getting worse, and that a mystery overhung the colliery which was not explained. He applied to Mr. Wales, the Government Inspector, and his reply unravelled the secret which Mr. J. Cory so successfully kept from them. Further capital must be expended before the output can be increased. There seemed to have been an arrangement with the Inspector, unknown to the company at the time of the purchase. The Chairman explained that on Oct. 19, 1871, Mr. Kelly (Mr. John Cory's partner) addressed to the Government Inspector a most important letter, containing a definite agreement and undertaking—which was the subject of the statement in the first circular—that the money of the shareholders had been spent in carrying out an agreement entered into by the vendor with the Government officers more than 18 months before the company existed, and all knowledge of which was withheld from the directors and the shareholders. In May last he (the Chairman) visited the colliery, and after a lengthened altercation with the clerks, &c., they admitted that the books were falsified purposely, with the view of falsely showing that the levels were worked at a remunerative price, whereas they were being worked at a loss. As an instance in illustration of the deception practised, a dozen men or so were employed pumping water from the level to the benefit of the contractor, the cost being charged to the imaginary work elsewhere, and paid by the shareholders. Also, it appeared that on April 10 one of the contractors for the level was 100*l*. short on pay-day, when Mr. John Cory sent him a cheque for the money, which was charged in the accounts against the company. Explanation was refused by Mr. John Cory, and when a question was asked in consequence of these discoveries, he requested Mr. Cory, as managing director, not to pay the contractors or other parties any items due to them pending further investigation. In conclusion, he begged to move that a committee be appointed to investigate the circumstances of the purchase by the company of the Pentre and Church Collieries, and the subsequent management and expenditure at the collieries, to investigate all matters connected with the company, and to report to an adjourned meeting of shareholders on July 8. He trusted that the steps he had taken with regard to the issue of the circular convening the meeting would meet with their approval.

Mr. JOHN CORY, in replying, stated that Col. Shakespear purchased the property on behalf of the shareholders on the reports of William Adams and Mr. D. Llewellyn, engineers of such standing and integrity as to place their reports beyond a moment's suspicion. He denied that the price given was exorbitant. The property was sold at the simple market price for which collieries were sold at the time, and they must remember the terms of purchase simply placed at their (Messrs. Cory's) disposal—deferred shares and debentures. The profit obtained from the collieries at the time they were sold—profits that would have paid some 20 to 30 per cent. on the purchase money—should be enough to convince everyone that the price was fair and in every respect reasonable. Indeed, he and his partner were so satisfied with the properties purchased that they had not sold one of their shares, although they had never been under any engagement not to do so. (Applause.) He was accused of suppressing correspondence which had passed between the Secretary of State for the Home Department or his officers, himself and and others respecting the colliery. This correspondence was not with him, for he never saw it until after the company was formed, but with their late partner and manager of the colliery, Mr. Kelly. Still he admitted there was an engagement entered into by Mr. Kelly to erect a ventilating fan, there was also to sink a new shaft; but it was not true that he intentionally or carefully concealed that engagement from the engineers employed by them to value the property. As to the expenditure at Pentre and Church, he was willing to admit that it had been very large. It must, however, be remembered that everything had been done very substantially, and that the work was done at a most convenient time, both as to material and labour, but nothing had been done without the full concurrence of his directors. Colonel Shakespear himself ordered very much of the machinery, and the greater portion of the outlay was made under the direction of Mr. William Thomas, who was then colliery manager, and who most extravagantly, as he (Mr. Cory) believed, would have much of the work done by the day instead of by contract. The result of this outlay, however, was that they had a property in a better condition for yielding a large quantity of coal than three-fourths of the collieries in South Wales. With regard to the fourth charge, that of falsifying the accounts, there was no doubt that money had been wrongly entered, but that these misentries had been made by him or by his instructions, either directly or indirectly, or with his knowledge, he most distinctly denied. The fact turned out to be that when the men began to work in the levels they found a large amount of dead work had to be done, which they had not taken into their estimate of the expense of working the levels, and that unless they were assisted in some way they could not fulfil their contract. D. Thomas, the clerk, and Wm. Rosser, the underground manager, now acknowledged that they did assist the men in doing this dead work chiefly in pumping water out of the level, and charged the cost to the new pit. They no doubt did this to verify their statement that the coal could be obtained from these levels at the sum named—5s. per ton. They stated, in their attempt to vindicate their conduct, that those employed were men they were obliged to keep on during the strike, and who would have been doing nothing if they had not been so employed, and that they intended when the quantity of coal worked was larger to refund the money. He need scarcely say when the quantity worked was larger the amount of dead work charged against it would be a very small sum per ton. Notwithstanding the increased sum which must be reckoned as the cost of working this coal, it had been worked at a considerable profit. It was also asserted, Mr. Cory continued, that there was a serious deficiency in the quantity of coal accounted for, and that, deducting what had been sold, and what it was alleged had been burnt, from the total quantity, the cutting of which had been paid for, there were still 588 tons missing. Messrs. D. Thomas and W. Rosser could give no explanation of this deficiency other than that the men had been accustomed to take for their own consumption, of which no account was kept, and that during the strike there had been a great quantity of coal stolen, twelve persons having been apprehended for theft. This explanation, he confessed, was by no means satisfactory to him; still, to discover this deficiency was no part of his duty as managing director. As he had stated, the accounts did not come to him; they were sent direct to the London office, and should have been examined by the Chairman and secretary, and the amount worked compared with the amount sold, and the difference noted and accounted for month by month. Every ton of coal that was sent down to his firm for sale had been duly accounted for, and there was no discrepancy in his firm's accounts. (Hear, hear.) In conclusion, he could only say that that the matters that had been placed before them must receive their earnest attention, and they must adopt the course which they consider best.

After a lengthened discussion, during which personalties were freely exchanged, the resolution was adopted, and Messrs. W. Bell, of Swansea, M. Moxham, of Swansea, L. B. Kenway, of Neath, W. Bell, of Norwood, Dawson, of Swindon, H. B. Barclay, and Charrington, were elected the committe.

A vote of thanks to the Chairman terminated the proceedings.

WEST ESGAIR LLE MINING COMPANY.

A general meeting of shareholders was held at the offices, Austinfriars, on Monday,—Capt. G. J. HAMILTON in the chair.

The report of the directors stated that in their last report they recommended the issue of 2000 new shares, and, at the same time, expressing their unshaken opinion of the value of the mine, and the probable satisfactory results should the amount required be subscribed. The opinion of the directors as to the value of the mines remains unaltered. They regret, however, that the shareholders have not supported them by raking up the *pro rata* number of shares to which they were entitled, but have only applied for 845 shares out of 2000. The directors have not, therefore, had sufficient funds at their disposal to enable them to carry on the operations in a manner beneficial to the company. The directors propose to issue debentures for 2000*l*., bearing interest at the rate of 10 per cent. per annum. They will form a first charge on the property of the company, and will, accordingly, be amply secured. They will be issued in sums of 5*l*. and upwards, to give the shareholders an opportunity of subscribing for whatever amounts they may please. It is proposed to make the debentures for three years, convertible at the will of the holders into ordinary shares, and to set aside 1000 of the unissued shares of the company for that purpose. After three years the company will have the right of redemption at par. Unless the whole of the debentures are applied for the directors will not feel themselves justified in recommending the issue.

The CHAIRMAN: This meeting, representing the half-yearly meeting, called by the desire of the shareholders, should have been convened two months earlier; indeed, had the meeting not been determined upon, he should have considered it his duty to have called the shareholders together to seriously consider the position of the company financially and otherwise. It would no doubt be remembered that at the meeting in November it was agreed to issue a further 2000 shares; had those shares been taken up, as he was informed they would have been, they would be in no difficulty as to funds, but of those 2000 shares only 845 were taken up, and three-fourths of the money had been used in paying off some of the debts and in carrying on the works at the mine. The mine had been in existence for upwards of five years, and if the shareholders had looked at the statement they would have seen that something like 15,000*l*. had been expended on the mine and in machinery up to February. He thought the shareholders would agree with him that both time and money enough had been expended to enable them to realise some profits and some of those promises which he believed proper management was capable of giving them. He would suggest that shareholders should express their own opinion, and propose that a committee of investigation should be appointed, and that an entirely independent authority should be engaged to inspect and report on the mine. He felt satisfied the report would be satisfactory, and would probably induce those shareholders to come forward who had not taken their proportion of the last issue, and enable them to realise those profits so long promised. He would strongly urge upon the meeting to appoint a committee of investigation, as probably the best and only means of ascertaining what had been wrong in the past, and advise how to work the mine in the future. He then proposed that the accounts be received and adopted. As to the report, although bearing his name at the foot, it contained a proposal from which he dissented—the issue of debentures. The resolution was passed at the board in direct opposition to his wishes, and, therefore, he would prefer that some other member of the board should propose the adoption of the report. Having found that as a board they did not work well together, he had felt it incumbent upon him to resign his position as director; but the following day he was asked to withdraw his resignation, which he did; but he could not continue to hold the position of Chairman when he found his wishes were disregarded—therefore, he now placed his resignation in the hands of the shareholders.

Mr. G. LAVINGTON said all other members of the board were unanimous about the proposal to issue debentures; he would on their behalf propose that the report be received and adopted. He mentioned that, in consequence of a continued drought, they had been unable to get the water out of the mine.

Mr. ARCHER said a statement was made at the last meeting that a gentleman was prepared to take up the unalloted shares. As the board consisted of gentlemen of respectability and integrity, he thought the meeting was entitled to some explanation upon that point.

The CHAIRMAN had already stated that had those shares been taken up as he had been informed they would, and led to say at that meeting they would be, there would now be do difficulty as to funds. He had been told by his co-director, Mr Lavington, that the shares would be taken up.

Mr. LAVINGTON was sorry that Capt. Hamilton made that statement. All that occurred was that he (Mr. Lavington) whilst coming to the last meeting happened to meet a gentleman in Cornhill who told him he would take up all the shares if the shareholders did not. He mentioned that conversation to Capt. Hamilton, and was astounded when he told the meeting. The Chairman had informed them that 845 of the 2000 shares had been taken up; he (Mr. Lavington) had subscribed for 100, but the board felt the whole must be taken up to make the property a success. At the last meeting 4000*l*. was asked for, but only 1690*l*. had been subscribed, and what the directors were now asking was to give them the balance, offering to those who came forward the mine as a security—a security very largely in excess of the amount proposed to be raised. The money must be had to carry on the mine, or it must stop. By a further small expenditure he believed they would realise their long looked-for expectations. They had had their disputes and troubles, but, like men of business, let them look matters in the face. He was prepared to subscribe for his proportion or more if the rest of the shareholders would come forward. He believed they possessed as good a property as there was in Cardiganshire, and none was better found in machinery.

In reply to questions, Mr. LAVINGTON said that in the 10 fm. level, in the eastern mine, they had a pare of men stoping, and the lode was worth 10*l*. per fathom for copper and lead; Capt. Harvey says he could put on 20 men to stope. With what could be raised from the western mine about two-thirds of the costs would be met by the returns. With the money the shareholders were now asked to advance the shaft could be carried down to the 45, and drivages extended to cut this lode, which had been so much talked of.

Mr. ARCHER had understood a report had been received from the mine during the last ten days or a fortnight.

The SECRETARY said a letter had been received, which was as follows:—

May 28.—In reply to yours of the 26th inst., I beg to inform you that Hamilton's engine-shaft—in the eastern mine—is sunk 34 fms. below the adit level, and have extended east of the shaft on the course of the lode 5 fms., the lode being chiefly composed of quartz, killas, and strongly impregnated with lead and copper ores, being a decided improvement in character to anything seen in the levels above, although not yet driven sufficiently east to come under the ore ground in the upper levels. I anticipate by driving east and west at this point, and sinking another 10 or 12 fms. in the shaft, to lay open some very valuable courses of ore at no distant period; this work will be proceeded with as soon as we get the bottom of the mine in fork. The 24 is driven east and west of the shaft about 7 fathoms, where the lode also presents a very fine appearance, being mixed throughout for about 10 to 12 ft. wide with lead and superior quality copper ore; and as the levels are being further opened on we shall be laying open some large and profitable stoping ground. The 10 is driven east and west of Hamilton's shaft about 20 fathoms. on the course of the lode, the lode averaging for the whole distance from 9 to 10 ft. wide, containing lead and copper ores throughout, and is being worked on tribute at 10s. in 1*l*., out of which an excellent profit is left to the share holders. I have had several fresh applications from miners to take tribute pitches in the backs of these levels at the same rate as the parties have it for at the present time, which I shall, with your permission, accept as soon as we get sufficient water to dress the ore. I may add that I consider this mine to be on the verge of giving good profits to the shareholders for their outlay, and believe we shall eventually open up one of the finest mineral properties in Wales. We have at surface all the necessary machinery for dressing, pumping, and all other requisites, and capable of working the mine over 100 fms. deeper. In the western mine the engine-shaft has been sunk 37 fms. below the adit. A 10 fathom level has been driven on the course of the lode 35 fathoms, the lode being from 30 to 40 ft. wide, and is being worked for about 15 ft. in width, which will yield on an average from 3 to 3½ tons of ore per fathom. The stopes in the back of this level are being worked by tributers at 2*l*. per ton, delivered into the ore bin ready for market; this will also leave a good profit to the company, at the same time having the advantage of the market. In the 37 a cross-cut has been started south to intersect a south lode which was just cut into in the 10; and, judging from the highly satisfactory appearance of it there, we cannot, in my opinion, possibly fail in obtaining a good course of ore, which would entirely open up a new mine, as it would be standing whole to surface. I am also of the opinion that if this engine-shaft was sunk (say) another 20 fms. deeper, and get under the enormous courses of blende seen in the 10, that we should get into lead ore equal, if not superior, to our present deposits of blende—in fact, it is well known in our principal dividend mines in the county that blende or copper are the predominant minerals from surface, and yields to lead ore in depth, so that this mine would be an exception to the general rule if it failed in producing what I have already stated. This mine is well laid out in the necessary pitwork underground, and at surface with all requisite patent dressing machinery, such as is not to be met with again in any other mine in the county; therefore, I cannot but add, in conclusion, that I do not know of a safer and more legitimate concern, and one that is more likely to pay greater dividends for the outlay than this.—R. HARVEY.

Mr. FOWLER suggested as the best means to obtain the necessary capital that each shareholder should subscribe 10 per cent. upon their present holding, and its repayment should stand as a first charge upon the property.

Mr. SNELL said if the shareholders came forward and each took 10 per cent. it would be all very well, but they would not do so, whereas if debentures were issued the shareholders might take more than 10 per cent.

Mr. TOYNE said that in raising debentures security was given for the money subscribed.

Mr. LAVINGTON was quite certain they would be able to raise much more than the amount necessary to pay the interest on the debentures. It would not be fair to argue from what had been done in the past as to the prospects for the future—for example, ore to the value of 100*l*. had been raised this year, and 200*l*. worth sold. If the present shareholders would not subscribe the necessary capital other people no doubt would. If every shareholder would come forward and subscribe a small portion the whole of the money would be raised and the mine mortgaged to themselves. Shareholders should not forget that had the lode been cut rich in the 34, eastward, and the level had not yet been driven far enough to reach the ore ground gone down in the level above; there were yet about 8 to 10 fms. to drive; in the 20 the lode was improving, and the 10 had gone through a good course of ore. He believed there was not one prospect or hope that had been held out that would not be realised. There were some 200 or 300 tons of blende broken underground in the western mine, which would now be returned at a very cheap rate.

After some discussion it was resolved, upon the proposition of Mr. GREENIP, seconded by Mr. HERRON, "That a committee of investigation be appointed (in conjunction with the directors) to enquire into and report upon the local management, and authorised to obtain a report from some competent man to report upon the property, and advise as to the best means of obtaining the necessary capital." Messrs. Fowler, Smith, and Greenip were elected the committee.

The CHAIRMAN said that as a committee of shareholders had been appointed, he trusted their endeavours would be crowned with success. He did believe in the mine itself. It would not be his lot to meet them again as Chairman, and as he had occupied that position from the formation of the company, he now begged to thank the shareholders for the courtesy he had always experienced at their hands, and trusted that his successor might have the pleasure of paying them large dividends.——A voce of thanks was passed to the directors.

The meeting then adjourned *sine die*.

DOLCOATH MINING COMPANY.

A three-monthly meeting of adventurers was held at the mine, on Monday, when Sir F. M. WILLIAMS, Bart., M.P., presided, and announced at the commencement of the proceedings there were proxies and promises of support in the room representing nearly 3000 shares. The accounts showed a profit on the three months' working of 2349*l*., and a dividend of 10s. per share was declared. The accounts and agents' report having been passed,

Mr. LOAM said he had a resolution to propose, which he hoped would meet with the unanimous approval of the adventurers. At the last meeting it was felt that the committee required to be strengthened, and since then the committee had taken the whole question into their serious consideration, and had shown a desire to meet, as far as they could, the wishes of the adventurers, both in and out of the county. He was quite sure that they all took a deep interest in the welfare of this great mine, for it was a mine upon which not only the success of the district depended, but it was of great historic value to the county at large, and if there should be any mishap, or anything should occur to bring a reflection upon the management, the consequences would be felt far beyond the immediate circuit within which the mine was situated. He was, therefore, quite convinced that they would all desire to uphold and strengthen the hands of the committee by unanimously supporting the resolution which he had to propose. That resolution asked the meeting to accord a vote of thanks to the committee for their past services; that they be re-elected, with the addition of the names of Capt. Josiah Thomas and Mr. William Rabling, and that in future no change in or addition to the committee be made, unless the same should have been authorised at a meeting, notice whereof should have been given to the shareholders not less than one month prior to the day of such meeting. He hoped this would be carried unanimously, for nothing could be more injurious to the welfare of the mine than to have these appointments canvassed both in public and in private, as had before now been done.——Mr. T. T. WHEAR seconded the resolution, which was carried unanimously.——In answer to Mr. ROSEWARNE, it was stated that the committee now consisted of Sir F. M. Williams, the Rev. W. Butlin, Mr. Cartwright, Mr. M. G. Pearse, Capt. Josiah Thomas, and Mr. Wm. Rabling.——The CHAIRMAN returned thanks on behalf of the committee for the compliment which had been paid to them. He was gratified to think that they had given satisfaction to the adventurers. They had always endeavoured to do so in the past, and he could assure them that it would be their anxious endeavour to do so in the future.

Mr. ROSEWARNE asked what the difference was between the price of tin at the present time and three months ago.——Capt. THOMAS: It is about 3*l*. per ton less, and it has made a difference in our returns of about 800*l*. That we should be able under these circumstances to pay the same dividend as at the last account must, I think, be very satisfactory to the shareholders.

Mr. HIDDERLEY wished to know if there was any difference in the quality of the coals recently supplied to the mine.——Capt. THOMAS: Immediately after the last account Mr. Rule offered me a cargo of coals at one shilling per ton less than the price charged by the merchants. I had a cargo of nearly 400 tons from him, and we have tried it with our pumping-engine with the result that it is about 13 per cent. less quality than the coals which we had from Portreath for 12 months previously. I may say further, that since the last account, when loud complaints were made about the quality of the coals supplied here, I have taken the trouble to ascertain the average duty that our large engine has done for the last 12 months, and I find that even with the bad coals which were represented as burning on this mine the duty of that engine was 17 per cent. more than the average of all the engines reported by Lean's Engine Reporter. Therefore, I think you will see that if the quality of our coal was really what it was represented to have been the coals burnt by other mines in the county must have been desperately bad indeed.

Mr. RULE: What quantity of coals did you burn during the month that I sold you that cargo?——Capt. THOMAS: About 768 tons. Your coals were mixed up with others in the rest of the mine, but at the pumping-engine they were burnt entirely by themselves.——Mr. RULE: How long did my coals last?——Capt. THOMAS: I can scarcely say.——Mr. RULE: I can tell you. They lasted about three weeks.——Capt. THOMAS: Yes; but they were mixed up with other coals, excepting at that engine.

Mr. RULE: My object never was to sell coals to the mine, but what I wanted was that Capt. Thomas should buy his coals direct from the collieries. But some of the adventurers at the last meeting did not approve of this, and altered the resolution. Capt. Josiah Thomas knows very well that I did not desire to supply the mine with bad coals.—(Capt. THOMAS: Certainly not.)—I showed him my price, and he accepted my offer. But what have the monopolists been doing since I had that order? They have not only been influencing parties around here, but they have been doing the same by going to Cardiff. The first cargo I imported here was of good quality, but after that it came out very bad. But if Capt. Thomas found that the coal was so bad why did he not comdemn it? Why did he burn it first, and then condemn it almost before I knew it was on the mine?——Captain THOMAS: Why, you were there just every day looking at it all the time that it was burning.——Mr. RULE: But I was not allowed to see the weight of my coal. I thought I could come in and tell the adventurers the overweight that they would save by importing their own coals, but I never had a chance of going to the weighbridge at all. But I kept an account of the carts that were sent out of the yard, and it only made a difference in a week of from one to two cartloads between my coals and the coals which you were having before from Portreath. That, I think, is a very important question. I say that I did not want to sell coals to this or any other mine; I was only anxious that we should import our own coals, because I am satisfied that by so doing we shall save the adventurers of this mine something like 2000*l*. a-year.——Capt. THOMAS: You may as well say 10,000*l*. as 2000*l*.——Mr. RULE: Why don't you at this meeting pass a resolution giving power to Capt. Thomas to import his own coals. How is it that you have fished up and come here to-day with 2000 proxies to try to annihilate me, and to upset our little attempt to get cheaper coals. I say that it is a shame and a disgrace to Cornish mining that a manager's hands should be tied, as Mr. Mark Guy Pearse tells me is the case here, and that he should not be allowed to purchase his materials in the best and cheapest market.

Mr. ROSEWARNE was very glad indeed that this question had been discussed, and that Capt. Thomas was getting coals from other quarters. He had no doubt upon the question when it was introduced at the last meeting, and he was pleased to find that the statements then made were not borne out by facts. He hoped the manager would have full power in these matters to do what he thought was best.——Mr. RULE: Since the last meeting I have had the pleasure of seeing Mr. Basset. Several of the adventurers in this mine were under the impression that if we had our coals from any other place but Portreath the screw would be put on in the matter of dues, but that gentleman told me that every mine manager was at liberty to get his coals where he pleased, and that he would not be in any way interfered with. But what is the consequence? Mr. George Williams wishes Mr. Cartwright to use all the influence he can that the mines with which he is connected should have their coals from Portreath.——Mr. CARTWRIGHT: I think you ought to allow Mr. George Williams to speak for himself, and not put words into his mouth or mine.——Mr. RULE: You spoke in the presence of Mr. Basset himself, and you certainly did use some influence in favour of the Portreath company.——Mr. CARTWRIGHT: Kindly tell me where it was?——Mr. RULE: Did you not say it in the Tehidy office?——Mr. CARTWRIGHT: I thought I asked you the question. I decline to answer any general statement made by Mr. Rule or Mr. Anybody else.——Mr. RULE: But you said it for all that, in the presence of Mr. Basset. That is how the screw is put on, and it makes our mine managers afraid to do anything.——Mr. CARTWRIGHT: You had better ask the mine managers, every one of them, whether I have ever attempted in any way to put the screw upon them.

Mr. LOAM: I really very much regret the turn which this discussion has taken, and I should be glad if Mr. Rule would confine himself to the question under discussion—that of economy in the use of coals, so that we may avoid as much as possible any reference of a personal character. I am quite sure that no man is more strongly interested in carrying out economical improvements, both in the matter of materials and coal, than Capt. Thomas. While I have been connected with Dolcoath Mine I know that this coal question has constantly cropped up, and some few years ago Capt. Thomas imported some coals from Cardiff, but while it was found that there was a considerable saving as to the quality, the experiment proved that the extra cost of the coals more than counterbalanced the saving that was thus effected, as we were losing something like 2s. per ton. I mention this to show

that we do not forget the interest of the adventurers; that Capt. Thomas is not in any way hampered in his management of the mine, and that we should be doing him and ourselves a very great injustice if we attempted to hamper him in any way. I know that he is fully alive to the importance of this subject, and the adventurers may rely upon it that they are perfectly safe in his hands.

The CHAIRMAN: I must be allowed to deny most distinctly that there has been any attempt on the part of the committee in getting these proxies to crush Mr. Rule or anyone else connected with this mine. We wish to give everybody fair play, whether he be shareholder, merchant, agent, or the lowest clerk in the mine —(hear, hear)—but I would respectfully submit whether the committee at the last meeting had fair play when they received no notice whatever that this question was to have been brought forward, and proxies were collected on the part of Mr. Rule and his friends with the object of turning out the committee.——Mr. RULE: I never fished up proxies to turn out the committee at all. My only object was that Capt. Thomas should have his friends freed, and be at liberty to go into the cheapest market. But who are the committee we have here now? What are they? In the first place they supply the mine with coals, timber, iron, and castings, and also they take our tin, pay us in bills, and discount their own paper. That is the committee we have at the present moment.——Capt. THOMAS: There is only one member of the committee who is at all connected with merchandise.——Mr. ROSEWARNE explained that the proxies which came into his hands on the last occasion were sent to him by Mr. M. G. Pearse quite unexpectedly, and he never had the slightest intention of using them for the purpose of turning out the committee.——Capt. THOMAS: There is not a single member of the committee who desires to purchase coals from the Portreath Company to the disadvantage of the adventurers. I have now a cargo coming direct from the Main Colliery at Neath, and when that is tried I will let you know the result. It will cost us a trifle more than we have been paying the merchants, but as it comes direct from the pit, we hope it will be of better quality.——Mr. BAIN thought Mr. Rule should be satisfied with the assurance that Capt. Thomas was at perfect liberty to purchase in the cheapest market, and that he was not in any way fettered by the committee.——Mr. RULE: That is all I require.——Mr. BAIN went on to say that Mr. Rule had received more credit in relation to this coal question than he at all deserved, and he contended that nothing which Mr. Rule had done had in any way led to the reduction which had taken place in the price of coals. It was entirely due to other causes.——Mr. RULE disputed this. Before he agitated the question they were paying 21s. per ton, but as the result of the agitation it was reduced to 19s. The monopoly would have no chance after this.

Mr. LANYON, in proposing a vote of thanks to the Chairman, said the discussion had had one good result. It had effectually relieved the committee of the reflections that had been cast upon them, and had established the fact that the adventurers could not be in better hands. Their having re elected the committee that day with such unanimity was tantamount to an absolute vote of confidence in them, and he hoped they had heard the last of these complaints, especially as it was clear that there was no ground whatever for them. He believed Mr. Rule had acted upon sincere conviction in the course which he had taken, but that gentleman could not now fail to be perfectly satisfied that all his premises had been satisfactorily explained away. Some unpleasant references had been made from time to time to the sale of Dolcoath tin, but he had no hesitation whatever in saying that the manager never allowed a single parcel of tin to go out of the mine if he thought that by withholding it it would be for the benefit of the adventurers, and Capt. Thomas was deserving of very great credit for the skill and judgment which he always exercised in the matter.

In reply to Mr. Carter, Capt. THOMAS said that the engine for working the man-engine cost 375*l.*, and there was new work to be added which would cost about 570*l.* more. The repairs would be very little.——Mr. CARTER wished to explain that at the last meeting he had not the slightest idea of displacing the committee; on the contrary he was anxious to strengthen their hands.——Mr. HOLMAN seconded the vote of thanks to the Chairman, which was carried unanimously.

Sir FREDERICK in acknowlegding the vote, said he came down that day because he was anxious that the whole question should be thoroughly ventilated, and he hoped this had been done to the satisfaction of the meeting. (Hear, hear.) It gave him great pleasure to hear the remarks of Mr. Rosewarne and Mr. Carter with regard to their intention towards the committee. He was quite sure those explanations would be accepted as satisfactory.

Capt. THOMAS said: I have put together a few figures with regard to the working of Dolcoath Mine during the last 25 years. It was 30 years ago that my father took the management of the mine. It was then almost gone to wreck and ruin, and it was the opinion of most persons that it would never make a profitable mine for tin. It was well nigh exhausted for copper, and several eminent geologists, amongst whom was Sir Henry de la Beche, gave it as their opinion that it would never pay for tin. My father, however, held a very different view, and in this he was backed up by other adventurers, especially by the late Sir William Williams. Many of the adventurers sold out, but my father persevered, and after a great deal of patient toil and labour the mine was turned into a very profitable one. It began to pay dividends on tin in 1853, and from that time until 1867, when my father died, about 772,000*l.* worth of tin was raised, and nearly 148,000*l.* was paid in dividends. After my father's death I was appointed manager, and without wishing to boast, I may say that the same bold extensive mode of working which had been carried on before was continued and extended after my appointment. We begun to cut down shafts, changed our drawings from chains to wire-rope, put in a new 85-in. pumping-engine, added 12 heads to the stamps, afterwards putting up a new 48 heads; added extensively to the dressing-floors, renovated the pitwork, and laid out altogether something like, 10,000*l.* in machinery during the last seven years. In the same period we have paid dividends to the amount of 160,000*l.*, or 12,000*l.* more than was paid in the 14 years previously. We have also increased our returns in those seven years 50 per cent. We are raising at the present moment 200 tons of stuff a-day, and are working on a more extensive scale than any other tin mine in the world. I must confess that I have been a little anxious lately on account of the remarks that have been made by a small, and I may be excused for saying an uninfluential, section of the adventurers, but I am rejoiced to find today that we have the confidence of an overwhelming majority of them. I shall feel great pleasure in serving you in the future as I have served you in the past. I could not do more if the property were own. (Applause).—*Western Daily Mercury.*

MONYDD GORDDU LEAD MINE COMPANY.

An extraordinary general meeting of shareholders was held at the company's offices, Moorgate-street Chambers, on Tuesday,

Mr. J. E. SMITH in the chair.

Mr. R. GARLAND (the secretary) read the notice convening the meeting, and a series of very encouraging reports were submitted.

The directors' report explained that the Chancery suit, which had involved the suspension of the mine for the past two years, had, through the intervention of two gentlemen who had become large shareholders, been got rid of, and the title was now virtually indisputable. The ore in sight is estimated to be worth 5000*l.* The lode is reported to be worth even at surface 10 tons of lead (worth about 200*l.*) to the fathom, and it is considered that this, almost unpreecedented as it is, is only an indication of far greater riches below.

Capt. Richard Rowse, after reporting upon the various workings, remarks that should the lode be as rich when intersected in the shaft (it is proposed to cut it at the 45) as it is at surface they will have one of the most valuable mines in the county, but if (as there is every reason to believe) it increases in size and strength as much as similar lodes in this district usually do, Monydd Gorddu will stand unrivalled even in this celebrated county.

The report of Mr. W. McCulloch, C.E., of Powell Dyffryn, states that the resources of the property appear startling, and are really so; that of Mr. T. A. Readwin, F.G.S., that he has never seen a virgin mine with such encouraging prospects. Capt. James Roach and Capt. G. Phillips consider the lode to be that of Hafon and Henfiwch. Capts. John Trevethan, Thomas Trevillian, and James Juleff express themselves equally favourably with regard to the prospects of the enterprise.

The CHAIRMAN, in moving the adoption of the directors' report, said that he was happy to have the opportunity of meeting the shareholders and expressing to them personally rather more fully than could be done in the report the favourable change which had now taken place in their prospects. In doing so, he would first call their attention to the marked difference that there was in the starting of this mine and that which usually attends the starting of other mines. In the latter case, proceedings are generally commenced because a vein that is productive elsewhere is known to pass through the property, and there are indications tending to show that if a large sum be expended in sinking shafts and erecting expensive machinery, &c., the property will probably turn out of value months or years hence; whereas in the case of the Monydd Gorddu Mine all these uncertainties, delays, and speculative outlays have been rendered unnecessary by the fact that the lead was discovered and extensively laid open at surface, and has since then been proved to the depth of 60 ft. They had, in fact, started with a certain instead of a problematical success. It had naturally been a source of great mortification to him that so much delay had occurred in realising their brilliant prospects; but they all knew the cause, as also the delay was now at an end, thanks chiefly to Messrs. Milsted and Church, who by the arrangements they have carried out, in concert with the directors, had removed every vestige of litigation or dispute, and had since then displayed an active energy in pushing forward the operations at the mine, which had already produced results that quite astonished and delighted him, as he had not expected that matters could have progressed so rapidly, and he felt that the shareholders were deeply indebted to those gentlemen. It was a great satisfaction to him that in giving a detailed explanation of the progress of these operations, every shareholder present (representing, as they did, the bulk of the shares) could follow out the subject fully, because they had all been to the mine, and one and all had repeatedly expressed the same opinion as to the value of their property as that held by the directors, and they had all, he had no doubt, joined in his belief that, now that the erection of the machinery was all arranged for and would soon be ready to prepare the lead for market, their next meeting would be for the purpose of declaring a dividend, and would be rapidly followed by many many other meetings for the same purpose, when the only remarks heard from the shareholders at the meeting would be that of universal satisfaction at their having invested their money in such a promising undertaking.

Mr. PICKETT begged to confirm the Chairman's remarks, and had pleasure in seconding the motion.

Mr. G. A. WOODHEAD, of Leeds, wished to say a few words in support of the motion. Having visited the mine himself, and taken such pains to ascertain the real facts about it, he quite believed in the Chairman's view of the value of the property, and had equally regretted with him that it should have laid dormant so long in consequence of the dissensions which had arisen amongst some of themselves, now, however, happily ended, and he trusted that, learning from that lesson, they should now all work together, for in unity there was strength, and having a valuable property, it only needed unity to enable the shareholders to reap the full benefit of its richness. As he had repeatedly said before, there need be no lack of money, for he (as the company's banker) had always been ready to advance any if required, but apparently there would now be no need of this, as the already subscribed capital, combined with the amount agreed to be paid in by Messrs. Wilsted and Church, would apparently be more than sufficient to complete the operations on the surface to send to market the ore already laid open, and put the mine into a divdend-paying state.

Mr. THOS. BURNETT expressed his satisfaction at the termination of all disputes, and the determination of all parties to pull together in future, when he had no doubt that all the brilliant promises of success would be realised.

Mr. MILSTED begged to thank the Chairman for the thanks tendered, and the hearty appreciation evinced by the directors for their services in carrying out the affairs of the mine, with which all were so well acquainted, that rendered anything like an elaborate report unnecessary; it needed only to say that the works were being rapidly prosecuted, in which he was happy to say he was being most ably seconded by their manager, that everything would be ready to go to work, even before they got down the water he thought, although we could be independent of the reservoir provided we got rain, in which case they would get sufficient water from the river to drive the wheel, and they could immediately commence preparing for market the large quantities of ore already laid open, when he was confident a very short time would place the affairs of the company in a most satisfactory and profitable position.

Mr. CHURCH said that he had heard from various quarters such glowing accounts of the value of this property that he had rather expressed incredulity as to their being borne out, and had even being described as a "wet blanket," but on viewing the mine he was bound to acknowledge that it it quite came up to the description given him, and far exceeded his expectations.

The proceedings terminated with a vote of thanks to the Chairman.

AUSTRALIAN UNITED GOLD MINING COMPANY.—At the extraordinary general meeting of shareholders held at the offices on Wednesday (Mr. E. W. Wingrove in the chair) the following resolutions were unanimously confirmed:—1. That the Australian United Gold Mining Company (Limited) be wound-up voluntarily.—2. That Mr. H. W. Lamb and Mr. J. H. Murchison be the liquidators, their remuneration to be 50 guineas.

'For remainder of Meetings see to-day's Journal.]

OLD TINCROFT CONSOLS, LELANT.

Some few months since a company was formed under favourable auspices for working the Old Tincroft Mine at Towdenack, in the Lelant district; and when the prospectus was first issued it was pointed out that there were unusual prospects of success, as the property immediately adjoined mines which have yielded immense quantities of tin, and contained identically the same lodes as the most productive of them—Wheal Margaret, Wheal Mary, and Wheal Reeth. For some time past mining enterprise has been much neglected, owing to the leading mines of the district having become temporarily poor; but in the Old Tincroft there is a vast extent of mineral ground (in the precisely corresponding position to that which proved so highly remunerative in the adjoining mines) which has been left unworked and, except by the old workers, comparatively untried. The general character of the district may be judged of from a reference to the tin returns of a few of the mines. Wheal Reeth, for example, sold tin to the value of 526,124*l.* 10s. 2d.; Wheal Mary, 320,000*l.*; Wheal Margaret, 300,955*l.* 16s. 6d.; Reeth Consols, 234,521*l.* 10s. 5d.; Providence, 429,362*l.*; Balnoon, 250,000*l.*; Trencrom, 150,000*l.*; Wheal Kitty, 275,000*l.*; Lelant Consols, 100,000*l.*; and the returns from other mines have been considerable. The OLD TINCROFT CONSOLS MINING COMPANY has a nominal capital of 10,000*l.*, in shares of 4*l.* each; and of these more than 1000 of the shares have been allotted. The necessity arises for obtaining machinery to stamp and prepare for market the tin which is now lying on the floors and elsewhere ready for stamping. The accuracy of the statements made in the prospectus (to which the names of the present directors have been added) can now be tested by results. The mine is considered to have turned out even better than was expected. The agent states that profitable ground has been laid open, and that he has every reason to believe, from present appearances, when this additional machinery is put up the mine will pay its own cost. Should any further discoveries be made, which it is most reasonable to expect, of course a profit would be realised; and as the greatest economy is exercised in all departments, the directors have full confidence that the mine will soon attain a dividend-paying position.

The management of the enterprise has been entrusted to Mr. J. B. Reynolds, of London, and the mining operations are under the superintendence of Capt. James Pope, who has had great experience in some of our best mines, both at home and abroad. It is intended to prosecute the workings with the greatest vigour, while at the same time the strictest economy will be observed in the management, so that the shareholders' interests will be well cared for. The directors have now determined to issue an additional 750 shares, payable upon easy terms; and it is remarked that as this will only raise the paid-up capital to 7000*l.*, even moderate profits will suffice to pay a high rate of dividend. The Diamond shaft, which promises to be the first by which returns available for dividends will be secured, is sunk to a depth of 30 fms. below adit, being 70 fms. from surface; and the 10, 20, and 30 fm. levels are cleared and secured, and can be worked on tribute. A cross-cut has been driven on a caunter, and in about 10 fms. more driving will cut Ellis's lode, which is standing whole to surface through the entire length of the sett, and thus there is great reason to believe that a large range of tin ground will be laid open and the mine quickly brought into a profitable state. This caunter lode has also opened out good tin ground that will work on tribute. The reports from Capt. Pope, late of Basset, Capt. S. Harris, of Great Wheal Vor, and Capt. W. Vivian, of St. Agnes Consols, bear strong testimony to the capabilities and prospects of the mine; and the directors very reasonably observe that when the great returns are taken into consideration, with the small amount of capital required to develope the undoubted resources of this mine, it cannot be regarded in any other light than that of a first-class investment.

THE MINERAL RESOURCES OF THE SOUTH-WEST OF IRELAND—No. VIII.

[FROM OUR SPECIAL CORRESPONDENT.]

The East Cappagh Mine, as its name implies, is situated to the east of the Old Audley, or Cappagh, Mine, and on the same run of lodes. The ore is of the same rich character as Cappagh, and yields a very high percentage of copper and silver. A considerable amount of preparatory work has been done in East Cappagh Mine in sinking permanent working shafts, fixing pitwork, driving levels, erecting a splendid and powerful water-wheel, building dams, making water-courses, and other valuable and available works. The east shaft has been sunk about 50 fms. perpendicular, with the view of intersecting the lodes, but stopped short of the object, and the west shaft 30 fms. The distance between the two shafts is 36 fms.; there is, therefore, a block of the lode standing whole between the two shafts 40 fms. high and 36 fms. long; also a block of ore ground 35 fms. high to the west of the west shaft. This fine run of rich ore may be worked to great advantage and profit by sinking the west shaft 6 fms., which would thoroughly ventilate the works and communicate with the 46, besides effecting a more speedy and economical mode of discharging all the stuff directly on the dressing-floors. The rock formation of this mine is highly favourable for the production of metallic minerals. There are several large promising lodes, the south lodes underlying north and the north lodes underlying south, and from their present underlie the east shaft, it is calculated, will reach the junction in sinking 10 fms. deeper. The true walls of the lode on which the 46 was driven west to the west shaft were never seen, but where the lode was cut into it was found to be 10 ft. wide (no walls), and containing rich ore, soft quartz, &c. The parallel lodes converge going west, and from their present direction will form a junction about 30 fms. west of the western shaft. About this spot there is a large cross-course, and everything indicating great deposits of mineral. The great quartz reefs in this property have been examined by experienced Californian miners, and pronounced by them to be decidedly auriferous. This mine is commanded by water-power for pumping, hauling, crushing, &c., and being situate close to Roaring Water Bay the operations may be carried out with a comparatively small monthly expenditure, there being no land carriage for the shipment of produce or landing stores, &c. To the north part of the sett there is a slate and slab quarry, from which considerable returns have been made from the surface rock. A small outlay would put this quarry in good working order, and as the slate is of a durable character and good colour, and there being a great local demand for it, this quarry may, no doubt, be profitably worked. Whether this mine was began by the late company with inadequate capital, or whether it lingered on for the benefit of officials, can only be known to those who are in the secret. Five or six men, however, digging away in foul air for two or three years could not be expected to do much. It is likely the directors and secretary, &c., in London were paid during this period for their services 20s. in 1*l.*, but it is certain that the creditors at this side got only 5s. in 1*l.* How much of the shareholders' capital went to promoters, &c., it is needless to enquire. It is sufficient to know that the capital was frittered away, and this is what is what is called "Mining in Ireland."

THE LEAD MINES OF BRITTANY.

Among the most important mineral fields of Brittany that of St. Brieuc, which extends over an area of some 50 square miles, has long enjoyed a high position, and the Trémuson and Bouexières miles, are, perhaps, more favourably spoken of than any others. The Trémuson Mine is favourably situated about 3 miles from the port of St. Brieuc, having an excellent stream of water running close to the works, and being approached by good roads. The workings have been carried to a depth of about 50 fms. below the adit level, on a strong champion lode containing rich argentiferous galena, the undressed ore yielding 31 ozs. of silver per ton and 76 per cent. of lead. Ore is to be seen a little below the adit in the 15, 24, 42, and in the bottom levels where the lode is about 3 ft. wide, containing ore of the above quality, and of the most promising character for the production of large quantities. Mining operations were commenced by the ancients, who carried on their works on an extensive scale, though, of course, in a very imperfect manner. Large quantities of ore were raised by them from the main lode, and the works were partially resumed about eight or ten years since, when a steam-engine was erected, the shafts and levels cleared and repaired, and about 60 tons of ore sold, some of which realised at Swansea over 37*l.* per ton. The then proprietors were, however, involved in the panic of 1866, the works were abandoned when on the eve of success, and the mine allowed to fill with water Some two years since a few gentlemen subscribed a small capital to re-open the mine, and although only a few men were employed for about six months after draining the water, some 40 tons of ore were raised and sold, and good ore discovered, which afforded ample conviction to those concerned that the property was worth energetic development.

The Bouexières Mine immediately adjoins the Trémuson, and is situated on the opposite side of the valley which separates the two. It contains two known silver-lead lodes, which were also worked by the ancients and with considerable success, but only to a shallow depth. No operations have, however, been carried on here for a long time. The large heaps of refuse now at surface contain very rich silver-lead ore, which yields by assay over 60 ozs. of silver per ton and 70 per cent. of lead. These lodes cross the champion lode of Trémuson, and will be reached by continuing the 40 in the latter mine. This can be driven at small cost, and will open up a virgin mine under the old Bouexières workings, and judging from analogy, there is scarcely a doubt but that, at the intersection of the lodes, large deposits of ore will be found. These intersections are eagerly sought for and watched by the practical miner and geologist, as metalliferous lodes coming in contact with each other invariably lead to important courses of ore; the lodes are embedded in a clay-slate formation of a most congenial character, easy of exploration, and are known to have yielded at shallow depth considerable quantities of rich ore, and can be worked without machinery by bringing the ore through the Trémuson Mine. The Plouvara Mine is about 3 miles south-west of the Trémuson Mine, and at a short distance from a railway station of the Paris and Brest Line, is of comparatively recent date, as it was only discovered when the railway was being constructed by the men employed in making a cutting, which exposed to view, only a few feet from the surface, 14 or 15 silver-lead lodes, several of which produced ore of the finest quality (ranging from 30 to 80 ozs. of silver to the ton, and 40 to 72 per cent of lead), as much as 3 tons having been raised in one day. To work the mines properly a pumping engine is required. This part of the concession is described as being in virgin ground, the works having nowhere been carried to a depth of more than about 3 fms.; and seeing so large a number of lodes running parallel to each other, and containing for the most part rich ore, crop out very near the surface and within short distances from each other, the mine is considered to have more than ordinary prospects of becoming a rich and lasting mine.

In another part of the concession, in the hands of the same proprietors, La Ville Alhen is a mine well worthy of attention. It contains several silver-lead lodes embedded in a clay-slate formation of a most congenial character for the production of silver-lead ore, and yielding what is termed steel-lead ore of fine quality, giving by assay from 55 to 78 per cent. of lead, and from 60 to upwards of 130 ozs. of silver per ton. Operations were suspended during the Revolution of 1790, after having been successfully carried on for about 25 years, and up to that time a large number of men were employed. It is reported upon good and reliable authority that the mine was never in a more prosperous state, nor produced larger quantities of ore, than at the time of its suspension, and the works have never been since resumed, although they offer a field for the investor and speculator in silver-lead mining rarely to be found. The working of this mine may be resumed, and its development carried on, by the outlay of a comparatively small capital, no steam machinery being required. In making a new road to the Château de la Ville Neuve, and in a short cutting thereof three parallel lodes were discovered only a few feet from each other, and although only 2 in. or 3 in. wide near the surface, they contained rich silver-lead ore. The ground in which these lodes are embedded being of a highly mineralised character, a trial was determined on, and a pit sunk about 3 fms. in depth, where the lodes were found to open out and become well defined and exceedingly promising, and about 3 ft. in width. One of them carries a leader of rich ore about 2 in. wide and 3 or 4 fms. long, showing indications of a course of ore in depth. Several tons were extracted from these limited workings, which gave, by assay made in London, 136 ozs. of silver per ton. The law of France prohibits mining operations within 40 feet of a public road, and as these preliminary works were under the road, all further exploration was suspended by order of the Mayor of the Commune, much to the regret of the proprietors. The works were, however, properly secured, and this group of lodes can be operated upon at a small expense; but a small portable steam-engine will be required, and the new works must be commenced outside the prescribed distance. The Rue Bourgée Mine is situated within a short distance of Chatelaudren. Several lodes traverse this portion of the property upon which the ancient workers must have carried on extensive operations, and the lodestuff found in the large heaps of refuse contains very rich stones of silver-lead ore and blende, giving by assay 50 per cent. of lead, and from 60 to 300 ozs. of silver per ton. One of these lodes was recently discovered near the railway, and a pit sunk thereon, which contained silver-lead ore of excellent quality, and presented every indication of an important lode. The discovery having been made within the limits of the railway, no further operations were permitted at that part. The lode, however, can be easily developed by sinking a shaft a little further from the railway, and as there is no question of the existence of a most promising lode containing rich ore, good results may be here expected at small cost.

Although the works of the ancients were carried on upon an extensive scale, and with evident success, it is believed 20 fms. was the deepest point reached in this mine. The *debris* from this mine has been extensively used for macadamising the roads of the district, and rich stones of argentiferous galena are frequently picked up, showing the ancients were not careful in separating their ore after having brought it to the surface. No doubt is entertained that the judicious expenditure of capital will be productive of highly remunerative results.

A LARGE MASS OF NATIVE COPPER.—A few days since, a mass of native copper, said to be the largest ever discovered, was brought from Lake Superior to St. Louis, Mo. The mass is heart-shaped, and weighs 6000 lbs., exceeding nearly double the weight of the famous copper boulder which was transported many years ago from the same region to the Smithsonian Institute. The new specimen exhibits the pure copper to the eye, and contains 98 per cent. of the metal. It was taken out from an ancient digging, 16½ feet below the surface, by a Mr. Davis, who had spent 25 years in copper mining. The mass, when found, had evidently been detached from its bed by the ancient miners. A number of pieces of copper were found beside the mass, weighing from 1 oz. to 17 lbs., which were evidently clippings by the old miners. Stone hammers weighing from 10 to 30 lbs. have been found in cart loads, several specimens of which were brought away with

the copper. These were the primitive tools with which these ancient miners had to do their work, and are found either perfect or broken from use, and the frag ments are found scattered through the *debris*. It has been computed that 200 o these old miners with their rude methods could barely be equivalent to two of th skilled miners of the present day. Who, and to what race they belonged, and at what time these people flourished, is not satisfactorily known, and can only be the subject of conjecture. The only plausible assumption is that they belonged to the ancient mound builders, and worked in metals, anterior to the Indian races, as evidences of their occupancy were seen by the early Jesuit explorers, and specimens which they clipped from the copper rocks are found scattered over the whole continent.—*Scientific American.*

MINING ON EXMOOR.—The depression in the iron trade through out the country is making itself felt down west among the iron fields of Exmoor The low price at which iron ore is now selling renders it hardly a profitable business, even when the sett is placed in a most advantageous position, and close to shipping ports or railways; so that upon Exmoor, with no port or railway for half-a-dozen miles or more, the adventurers in iron setts are now at a disadvantage. Thousands of tons of good ore are at surface among the hills of Exmoor, awaiting a rise in the markets, for at the present figure the profits would be very small indeed. There are iron ore lodes upon Exmoor in sufficient numbers to give employment to ten thousand miners for years to come; but the great difficulty at present felt there is the want of mineral railways to intersect the different valleys, and so afford a cheaper means of transporting the ores to a shipping port. A proposal is made to start a company with a capital of 40,000*l.* to work some setts there, and to lay a narrow-gauge railway for a few miles.

FOREIGN MINING AND METALLURGY.

The iron trade has shown little or no animation at Paris. Although this may be said to be the height of the building season, operations do not exhibit all the activity which had been hoped for. At St. Dizier the works manufacturing sheets are well employed, and the same may be said of the foundries which produce castings for railways and gasworks. There has been little or no variation in the price of iron or pig in France. Two important works in the east of France propose to establish shortly differential trains on the Lauth and Deby system; the Gouille Works, ably directed by M. Waltefangle, are establishing a train for fine plates. MM. Gonvy Frères are also carrying out sundry improvements at Dieulouard. The Manosque Mines and Ironworks Company is now paying a dividend for 1874 at the rate of 1*l.* per share. The Alais Mines, Foundries, and Forges Company is also paying a dividend of 1*l.* 12*s.* per share for 1874.

Resolutions were unanimously passed at the recent Metallurgical Conference in St. Petersburg desiring the Government to enhance the Customs tariffs for the protection of native industry, to subsidise Russian private metallurgical undertakings by the establishment of State credits in their favour, and to continue and extend the manufactories and other works already conducted by the Government itself. These resolutions (says a correspondent of the *Independance Belge*) have induced several Russian journals to denounce scientific and other congresses in general as the plague of the age. The journals in question urge that the realisation of the wishes of the assembly of metallurgists would be fatal to the true interests of Russian trade, and assert that the patronage and protectionist measures of the Government, far from favouring the development of Russian mining and metallurgy, tend to impede the progress of both industries.

Chilian copper in bars, delivered at Paris, has brought 86*l.* per ton; ditto, ordinary descriptions, 84*l.* per ton; ditto, in ingots, 91*l.* per ton; English tough cake, 90*l.* per ton; and Corocoro minerals (pure copper), 86*l.* per ton. At Marseilles, Spanish in plates has brought for consumption 84*l.* per ton; small refined ingots, 88*l.* per ton; refined Chilian in ingots has brought a similar rate. At Rotterdam, Drontheim has realised 50 fl. to 52 fl.; and Russian Crown, 51 fl. A slight improvement has taken place in the price of tin at Rotterdam. Banca has been dealt in at 50¼ fl., while 48 fl. has been offered in vain for disposeable Banca. Transactions may at the same time be said to be limited to the most pressing requirements of consumption. At Paris, Banca delivered at Havre or Paris has realised 93*l.*; Straits, delivered at Havre or Paris, 88*l.*; and English, delivered at Havre or Rouen, 91*l.* per ton. French lead, delivered at Paris, has been quoted at Paris at 22*l.* 10*s.*; and Spanish ditto, delivered at Havre, 22*l.* per ton. At Rotterdam, Stalberg lead has brought 13¾ fl.; Spanish, 13¼ fl.; and German of various marks, 13 fl. Silesian zinc, delivered at Havre, has been quoted at Paris at 25*l.* 4*s.* per ton; ditto, other good marks, delivered at Havre, 24*l.* 16*s.*; and ditto, delivered at Paris, 24*l.* 16*s.* per ton. At Marseilles, the quotation for rolled Vieille-Montagne zince has been 30*l.* per ton, with a discount of 3 per cent. to consumers.

There is little news to communicate with respect to the Belgian coal trade; the market remains quiet. An understanding appears to prevail among the coalowners of the various basins with a view to the maintenance of prices at their previous level. Belgium is, without contradiction, the country in Europe which presents in the working of its collieries the most striking differences one way or the other; one colliery selling its products at current rates realises large profits, while another colliery works at a loss at the same prices. The depth of the pits, the length of the galleries, and the difficulties attending working are evidently the principal causes of this anomaly. The imports of coal into Belgium in the first four months of this year are officially returned at 219,000 tons; in this total English coal figures for 150,000 tons, and coal from the Ruhr basin for about 40,000 tons. In the first four months of 1873 the corresponding imports were 166,000 tons, of which England furnished 40,000 tons. England appears likely to acquire an important position upon the Belgian coal markets, unless the price of the indigenous coal of Belgium should fall to a rather marked extent. The exports of coal from Belgium in the first four months of this year were 1,200,000 tons (of which 1,165,000 tons went to France); the exports in the first four months of 1874 were 1,000,000 tons; and in the first four months of 1873, 1,370,000 tons. Coal quotations are still higher in the Charleroi district than in the Liége basin.

There is nothing very special to note with reference to the French coal trade. The imports of coal into France *via* the northern and eastern frontiers are increasing rapidly, and having regard to the successive reductions which have taken place in the price of mineral combustible in Belgium, England, and Germany, the check which the fall in prices has received will probably be found to be of very short duration. No revival in metallurgical industry can be reported, and between this month and the commencement of winter the requirements of consumption will necessarily be extremely limited. The Grand Combe Mines Company will commence the payment, on Tuesday, of a dividend of 2*l.* 4*s.* per share.

The intelligence received with reference to the Belgian iron trade is of a somewhat contradictory character. Some works which had been closed are, it is stated, again about to be brought into activity; on the other hand, there are reports as to the probable closing of other establishments which had been believed to be well provided with orders. These remarks apply more particularly to works of secondary importance; the great establishments remain *in statu quo*. At these last establishments enquiries have come to hand tolerably freely for rails, for certain descriptions of plates, for tyres, for puddled bars, &c.; it is admitted, however, that Belgian rates are generally a little too high to enable competition to be advantageously sustained with English works, and until wages and coal for industrial purposes fall to a lower point in Belgium it is expected that this will continue to be the case. The most serious apprehension which weighs upon Belgian ironmasters just now, and which checks the conclusion of long-termed contracts, is the fear that on the first appearance of activity at the Belgian ironworks the Belgian colliery proprietors would again attempt an advance in coal, which would pitilessly strangle Belgian iron and steel interests. The exports of iron and pig of various descriptions from Belgium presented a falling off of 15,884 tons in the first four months of this year, as compared with the corresponding period of 1874. Rail exports declined to the extent of 8444 tons in the first four months of this year. The imports of iron and pig into Belgium in the first four months of this year presented a reduction of about 5500 tons, as compared with the corresponding period of 1874. Depression is still the order of the day, upon the whole, in the Belgian iron trade The Sclessin Company has obtained an order for a bridge about 3600 ft. long, which is about to be thrown over the Volga, in Russia. The construction of this bridge is to be commenced in August. Herr Julius Pirtsch, of Berlin, has introduced a system of lighting railway carriages by gas; each carriage has its own separate gasometer; a trial has been made of this system upon the line between Brussels and Antwerp, and the results are stated to have been satisfactory. The Belgian Government is about to let a contract for two iron pilot boats. At a recent adjudication of *matériel* for the Belgian State lines the Seraing Works obtained a contract for cast-steel for springs at 8*l.* 7*s.* per ton.

AUSTRALIAN MINING—MONTHLY SUMMARY.

The old BURRA MINE, although but the shadow of its former self, has not sunk so low as to have ceased to be an object of interest to the public. The report of the directors for the past year shows that not only does the property continue to furnish employment to a number of men, but that there are marked symptoms of revival. It is vain to expect a return of the success which once attended operations at the mine; but there is life in it yet, and the prospect of its again paying dividends is not altogether hopeless. It appears that during the six months ending with March the yield of ore was 1308 tons, of an average produce of 21 per cent. of pure copper. This, added to 499 tons in hand at the close of September, 1874, and 50 tons raised in excess of the estimate duriag the half-year before last, makes up a total of 1857 tons available for sale in the course of the six months now ended. Out of that aggregate 1452 tons have been disposed of to the English and Australian Copper Company, so that at the beginning of April there were 405 tons on hand. The report of Capt. Sanders speaks favourably of the condition of the machinery, plant, and so forth—mentions that the excavations during the last six months have revealed two fresh lodes of a promising character, and intimates that the company's establishment consists of 212 persons. The directors are so well satisfied with the aspect of affairs that after careful consideration they have resolved upon extending operations for the development of the mine and for ascertaining its ore-producing capabilities.

MOONTA MINE.—The report of the Moonta Mining Company for the half-year ending March 20 shows that the quantity of ore raised during the period has been 9554 tons of ore, yielding 22 per cent. of fine copper, and 1250 tons of slimes of 7½ per cent., making a total of 10,804 tons. This, with the 2914 tons that were on hand, makes an aggregate of 13,718 tons available for disposal during the six months just closed. Of this 10,766 tons have been sold to the Wallaroo Company, under terms of an agreement entered into with that proprietary some time ago. The sale of this has realised the large sum of 136,475*l.* 13*s.* 5*d.*, against which must be placed the working expenses, which amount to 86,588*l.* 2*s.* 11*d.*, thus showing a net profit of close upon 50,000*l.*, apart from the value of the 2952 tons of ore still unsold, which is estimated to return 38,376*l.* From this it is proposed to pay a dividend at the rate of 10*s.* per share, which will absorb 16,000*l.* From Capt. Hancock's report as to the state of the various workings at the mine we note that 26 shafts have been kept in active operation, and that the production has varied from 1 to 7 tons per fathom, the richness of the ore varying from 14 to 50 per cent. of fine copper. The company's establishment consists of 18 officers, 886 miners, 70 mechanics, 250 labourers, and 234 boys at the mine, and three officers at Adelaide, making a total of 1461 persons now in the company's employ.

DEVON CONSOLS.—The balance-sheet of the Yorke's Peninsula Mining Company shows that the ore raised for the past half-year amounted to 336 tons, valued at 2359*l.*, while the 370 tons previously raised only fetched 1790*l.*, showing a satisfactory improvement in quality. The expenditure has been 4576*l.* The statement of assets and liabilities, without including the value of the leases, shows a balance in favour of assets of 5485*l.*, in addition to which there is ore at grass worth 500*l.* The result, on the whole, may be considered decidedly promising. The half-yearly meeting passed off satisfactorily. We hear that the Devon Consols has now arrived at a stage in which it may be looked upon as one of the most important mineral properties on the Peninsula.

LADY ALICE.—The manager reports that during the past fortnight he had crushed 210 tons of quartz, yielding 98 ozs. 13 dwts. of smelted gold. He has also sent away 7 tons of copper ore, and will be able to send away a similar quantity every fortnight for some time. At the 50 ft. level the stopes going south show an improvement both for gold and copper; it was from these stopes that the last crushing was obtained.

BAROSSA GOLD.—In Mr. William's window, King William-street, there are to be seen two bars of gold, representing the two last crushings at the Lady Alice Mine. They contain one 98 ozs. and the other 200 ozs.

COOKING BY SOLAR HEAT.—A very good idea of the intense heat experienced lately at Ballarat may be gathered from the fact that a gentleman on Soldier's Hill, who thought it unnecessary to have a fire in the house to provide him with a meal, utilised the sun's rays to cook an omelette, and the feat was successfully performed. The local *Courier* states that "he placed a school slate for some time out of doors, then spread some butter upon it, and, breaking an egg thereon, in a few minutes the egg was perfectly cooked, as if done in the orthodox pan over the fire."—*South Australian Register* of April 22.

AUSTRALIAN MINES.

PORT PHILLIP AND COLONIAL (Gold).—April 17: Quantity of quartz crushed for the four weeks ending March 24, 6127 tons; pyrites treated, 15 tons; total gold obtained, 775 ozs. 17 dwts., or an average per ton of 5 dwts. Receipts, 3188*l.* Payments, including 518*l.* paid for firewood and mine timber, 3051*l.* Profit 136*l.*, which, deducted from last month's debit balance of 255*l.*, left a debit balance of 119*l.*, which was carried forward to next month's account.

ENGLISH AND AUSTRALIAN (Copper).—The directors have advices dated April 22. The quantity of coal on hand was about 2452 tons, besides some shipments afloat. The furnaces both at Port Adelaide and Newcastle were in full work. In consequence of scarcity of freights no shipments of copper had been made since date of last advices.

SCOTTISH AUSTRALIAN.—The directors have advices from Sydney, dated April 16, with reports from the Lambton Colliery to the 13th. The sales of coal for the month of March amounted to 9632 tons.

ANGLO-AUSTRALIAN.—J. Raisbeck, Fryerstown, April 19: I have the honour to report progress since the 23rd ult.—Cross-Cut, 320 Ft. Level: We have extented this drive 21 ft., and are passing through small leaders of quartz, but none of value; the ground still continues hard and very wet; present end from shaft, 141 ft.—Cross-Cut, 200 Ft. Level: This drive has been extended 16 ft. Not finding the change I expected, and the air getting very weak, I stopped the end, and commenced to rise to intersect the north drive from prospecting shaft. We have put the rise in working order, and risen 2 ft. 6 in.; we then called for tenders, and let 60 ft. of rise, at 27*s.* 6*d.* per foot, on the 14th inst. I have sunk at intervals a shallow shaft near Redhouse's south boundary, he having a fair prospect a short distance from our shaft, and have got 3 tons of quartz on the surface. On the 9th and 10th inst. we cleaned the boiler and flues, and had the engine and machinery thoroughly examined and rectified. We have crushed for the public during the month 74 tons of stone.

AUSTRALIAN CENTRAL.—Mr. Gill, Fryerstown, April 19: I anticipate that the main level will be extended half the required distance by the end of the month, and the balance completed in two months more. The ground is harder than at the commencement, and I have been compelled to raise the price per foot to 14*s.* 6*d.*, the contractors not making wages at the original amount—11*s.* 6*d.*—and, consequently, were about to throw up their contract. The ground is actually worth about 17*s.* per foot. I gave instructions to Capt. Anguin to employ some men to work a portion of the gutter near the eastern "jump up," but finding, after a week's trial, that some considerable amount of dead work was involved, and that the ground could be worked to more advantage eventually, I thought it more advisable, under present conditions, not to incur any risk, and discontinued operations.

— Capt. Anguin reports: "I beg to inform you that the contractors have extended the reef drive 140 ft.; the distance from chamber is 140 ft., and from shaft 150 ft. It will be absolutely necessary to extend it 250 ft. more, making a total distance from shaft of 400 ft. When that is completed we shall put up a 'jump-up;' we shall then be in a position to break wash dirt, and from present appearances it will be very good. I am of opinion it will take us 10 or 12 weeks to accomplish the necessary work, and it cannot be effected without capital. I have no doubt in the future prosperity of the mine, there is every indication of its soon becoming a dividend one, and my confidence in it remains unshaken. I may also inform you that the engines and shaft are in thorough repair. It would be a great saving to the company if we could get a stock of firewood, prop timber, lathes, &c., on the mine, as in the course of two or three months the price of timber will be doubled."

YORKE PENINSULA.—The directors have received advices from the committee of inspection at Adelaide, dated April 21, with reports from the Kurilla Mine to the 19th.—Capt. Anthony reports: Hall's Shaft: The 15 east is being driven by four men, where the price is reduced from 8*l.* 10*s.* to 6*l.* 10*s.* per fathom, chiefly on account of the hauling shaft being holed to this level. The lode in this level is not producing much ore, although small "boxes" of ore have cropped up in the bottom of the drive from time to time, showing that we are driving over ore ground. The hauling shaft is holed to the 15, timbered and cased, and a double-action whip fixed on it, so that the stuff is now being discharged here that was formerly wheeled at great expense to Hall's shaft. I am now cutting a plat at the 15, and also putting in a "stull" (gallery) to facilitate the removal of the ore from the wide lode. It is my intention to resume sinking this shaft to the 25 as soon as the plat is cut. The 25 east is being driven by four men; price reduced from 8*l.* 10*s.* to 6*l.* 10*s.* per fathom, showing that the eastern ground can be easily and cheaply worked. The lode is not rich, but is making paying tribute ground of (say) 6*s.* 3*d.* to 8*s.* in 1*l.*, the most regular paying lode ever driven through in the mine. . . . . Grainger's shaft is complete to the 15, and being cut down below that level. The new lode I am driving west of trial pit No. 1, by two men, at 3*l.* 10*s.* per fathom. Also running down an attle-pass east of that pit to facilitate stoping away the ore and filling the excavations made thereby. I expect to hole this pass to the 10 in a fortnight from that date, when I shall begin to stope away the ore. . . . . If we consider our present eastern drives in connection with the shallow deposit at Trial A Shaft, and, but in a more remote sense, with the ore ground in the Devon Consols, adjoining Kurilla on the east, there is every reason to hope that there is a long piece of paying ground in this part of the mine. I have bagged, and partly dispatched, about 100 tons of ore of (say) 12 per cent., and have about 40 tons on hand.

IMPERIAL BRAZILIAN COLLIERIES.

[Extracted from the *Rio Grandense* Brazilian Newspaper, Porto Alegre, April 13.]

OFFICIAL SECTION.—Speech to the Legislative Assembly of the Province of Sao Pedro do Rio Grande do Sul, from the President, Dr. Joao Pedro Carvalho de Moraes, in the first session of the Seventeenth Legislature.

ARROIO DOS RATOS COAL MINES.—According to the report just sent into me by the engineer, Pedro Berndes Primavera, Inspector of the Mines of the Province, the Arroio dos Ratos Coal Mine is now in a position to supply daily from 250 to 300 metrical tons of coal. In proportion as the underground workings get deeper the quality of the coal improves. The deeper part of the seam of coal which is now being worked contains, more or less, about 3 palmos thick of bituminous coal, free from the sulphury pyrites, which only now and again appear in more or less quantities in the lower part of the same seam, which averages from 6 to 7 palmos thick, and according to the above-named engineer the coal is nowise inferior to best English coal. The works in connection with the mine are superintended by the engineer, William Tweedie, and are carried on in the safest possible mode, in accordance with the plans which he has designed for that purpose, and which show daily the state of the galleries and of their underground workings, their directions, extension, and depth. The number of workmen employed on the colliery amounts to 30, and the machinery comprises a first-rate apparatus for raising the coal, worked by means of a pair of high-pressure steam-engines of 40-horse power, a 25-horse power horizontal steam-engine for working a circular saw, erected for the purpose of preparing the necessary timber for the galleries, a steam-hammer of 6 tons power erected in the smithy, and finally a locomotive for the railway extending from the mine to the Port in Sao Jeronymo, and measuring from 6 to 7 miles.

THE MINERAL RESOURCES OF CANADA.

Although the vast extent of the mineral resources of Canada has frequently been brought before the notice of the readers of the *Mining Journal* in the valuable communications from the Commissioners of Mines, Government Inspectors, and others less directly connected with the Executive of the Dominion, amongst whom special reference should be made to Mr. F. N. Gisborne and Mr. Alexander Heatherington, the enormous riches of the Dominion are even yet comparatively little known, and the necessity still exists for impressing upon Englishmen the unusual attractions of the Dominion as a field for enterprise, in order to induce British capitalists to assist in providing the requisite funds for bringing the almost innumerable mineral and industrial properties into remunerative working order. Much information of the kind indicated was given in the address* of Mr. Jenkins, M.P., before the Manchester Reform Club, although the mineral resources are less prominently noticed than they deserve to be. He tells us that the English visitor who goes amongst the people of this province finds that he is with brethren and friends. Although almost every nationality in Europe, from Iceland to Italy, has its representatives, the mainstays of the population are those from the British Islands. Their physical vigour, their British energy, their loyalty to the Crown, their love for the country from which they have sprung, the air of British society, with its manners and tone, which pervades the whole community, make one feel that here we have but to transfer to a larger area—under novel conditions, it is true—of a piece of Great Britain.

With the Atlantic provinces—Nova Scotia, Cape Breton, and New Brunswick—the readers of the Journal are already familiar, and with regard to British Columbia, Mr. Jenkins remarks that it is the last link in the long chain of empire on the western cost, combining in itself almost all the advantages possessed by the most favoured northern countries of Europe, with a concentration and variety of wealth and solidity of promise which, could it only be reached by population, would make of it alone a mighty nation. It can be shown that British Columbia has, in its situation, climatic advantages rivalling those of Great Britain. A great stream running from the tropics impinges upon its coast, and disseminates its salubrious influeuces over an extent of country much greater than that of the British Isles. The facts related about this wonderful region, whether as regards its agricultural capacity or its mineral riches, are almost incredible. It is said that in its forests are trees of 6, 10, or even 27 to 30 ft. in diameter, some of them ranging from 150 to 300 ft. in length, without knots or branches. The total area is 350,000 square miles, of which the wheat area, south of lat. 55° N., is 96,000,000 acres. Gold has been extracted from its mines to the value of $22,000,000, which can scarcely be said to have been as yet fairly explored. Its coal fields, in which are found veins unexampled in size and quality, will probably before long be the chief source of supply for Pacific navigation. The result of recent explorations of these coal fields gives these surprising facts. The productive area may be safely considered to be at least 300 square miles. Following the rule applied to coal fields in South Wales, the Union Mine, at Cromot, alone would yield 16,000,000 tons per square mile, and the Baynes Sound Mine 7,860,000 tons per square mile. The total thickness, it is stated, of the coal measures in the Nanaimo coal fields may be safely estimated at 2500 ft. It will be seen at once how important this place—so fortunately situated, so richly endowed by Nature—is likely to become.

The Canadian Pacific Railway will place New Westminster about 500 miles nearer to London than San Francisco. The railway will run upon a lower and more level grade. The greater part of it will pass as we have seen, not, like the Union Pacific Railway, through a desert, but through a country capable of bearing a vast population. No harbours like those of British Columbia can be found elsewhere on the Pacific Coast, and when communications are established and trade is developed between the Pacific shores of the Dominion and China, Japan, and even Australia, who can doubt the important part which British Columbia is destined to play in the history of the British Empire?

Mr. Jenkins's address should be carefully read by both Englishmen and Canadians; the study of it will make the one comprehend that it is to his own interest to assist in the development of our most important colonial dependency, and will teach the other what little changes he may make to attract from Great Britain more of that working capital he so much requires.

CONTINUOUS BRAKES.—At a meeting of the Society of Engineers on Monday, the president, Mr. J. H. Adams, in the chair, a paper on continuous brakes was read by Mr. St. John V. Day, C.E. The author, in the first place, pointed out 18 conditions essential to a perfect brake, and then proceeded to consider the several systems of brakes which had been practically tested. Clark's chain brake, and his more recent hydraulic brake operated by the admission of steam below a piston in a cylinder, forcing up the piston and thereby communicating pressure to the several brake cylinders throughout the train, were noticed, together with the most recent results obtained with Clark's chain brake. The Heberlein brake was then described with the results obtained in trials with it in Bavaria, after which continuous brakes operated both by vacuum as well as a plenum of compressed air were dealt with, the former on the system of Du Trembley and Martin, as well as the Smith, Westinghouse, and Sanders vacuum brakes, the latter according to the reaction systems of Westinghouse, and that of Messrs. Steel and McInnes, as running on the Caledonian Railway between Glasgow and Edinburgh. The author stated the results of experiments with the different brakes mentioned, from which he concluded that neither the chain nor vacuum brakes were capable of fulfilling the conditions essential to a perfect brake, that excepting the Sanders vacuum brake, the other brakes operated by a vacuum could act as train-stoppers merely, unless the recent proposal to apply an exhauster in the guard's van was found to answer, in which case there were possible circumstances wherein a vacuum brake might stop both parts of a train in the event of a portion breaking away. The general conclusion at which the author arrived was that, a perfect brake was only to be found up to the present time in the reaction systems of Westinghouse and Messrs. Steel and McInnes, but that on account of the limited number of reliably ascertained experimental results at present at disposal, it was impossible to estimate the relative efficiency of the several brakes which had been tried. It was to be hoped that the deficiency of our knowledge in that respect would soon be removed by the experiments now being conducted by the Accidents Commission.

OLD TINCROFT CONSOLS.—In such depressed times as these it requires go small amount of courage to venture on new concerns, but I see that a bold attempt is being made to carry on Old Tincroft Consols. It has been at work for about eight months since the first issue of the prospectus, and with such encouraging results that it is now proposed to raise additional capital to meet the necessity that has arisen for effective stamping machinery. The mine, I am informed, has turned out even better than was expected, and the managing agent is very confident in his belief that when the requisite machinery is put up the mine will pay its own costs. Other practical men also speak with considerable confidence of the future prospects of the "bal" if properly developed, and spite of the times I think the directors have strong grounds for appealing to the public for the additional capital. Their principal recommendations are that the mine is situated in one of the richest districts in Cornwall, immediately adjoining mines which have yielded immense quantities of tin, and that it contains the same lodes as three of the most productive of these mines—Wheal Reeth, Wheal Mary, and Wheal Margaret; and, as proof of what the district has done in times past the directors in their prospectus supply some very important information. Wheal Reeth in its day sold tin to the value of 526,000*l.*; Wheal Mary, 320,000*l.*; Wheal Margaret, 300,955*l.*; Reeth Consols, 234,521*l.*; Providence, 429,362*l.*; Balnoon, 250,000*l.*; Trencrom, 150,000*l.*; Wheal Kitty, 275,000*l.*, and Lelant Consols, 100,000*l.* For a long time past mining enterprise has been greatly neglected in this neighbourhood mainly, I believe, on account of the fact of the most celebrated of the mines having become poor, but it has always been a matter of surprise to me that such a large extent of good mineral ground should have been for so long left unworked. Seeing what has been done before, and looking at the results that have been obtained during the short time that Old Tincroft Consols has been at work, I think its chance is a remarkably good one, although the times are certainly not encouraging.—*Western Daily Mercury.*

CORNISH MINE SHARE MARKET.—Although the share market has not been very active during the week, the demand for shares has been strengthening, and prices have been gradually advancing, and close at the highest point reached for some time. The tin market is also apparently gradually hardening. The following are the closing prices:—Carn Brea rather better, at 40 to 42. Cook's Kitchen steady, at 5¾ to 6¼. Dolcoaths have advanced to 42, 44, ex div. East Pools have advanced to 15, 16. East Lovells quiet, at 8 to 9. In Providence shares nothing doing—called 3 to 4. Rosewall Hill, 4*s.* to 6*s.*; at the meeting, on June 16, the 13*s* forfeited shares will be offered for sale by auction or tender. South Carn Brea shares not quite so good, at 22*s.* 6*d.* to 28*s.* South Condurrow shares more enquired for, at 3½ to 3¾. South Crofty shares in demand, at 20 to 22; there is a fine lode at the shaft. South Frances called 3 to 5. Tincroft shares more in demand, at 21 to 22. West Basset, 4¼ to 4¼; West Frances, 7 to 8. In West Seton shares nothing doing—called 12 to 14. West Tolgus shares unaltered—43 to 45. Wheal Jane, 3 to 3½; Wheal Kitty (St. Agnes), 3 to 4; Wheal Peevor, 2¾ to 3. Wheal Uny shares rather weaker, at 1¾ to 2. West Chiverton shares keep firm, at 15 to 15½, and many assert they will go much higher. Strange to say, the eastern ground—said to have been all worked out by the old management—is again likely to turn out well. They have a lode at Susannah's, the extreme eastern shaft, in the 80, worth 12*l.* per fathom, and the 80, up to the 60 here, is in whole ground. The winze below the 130 is worth all of 5*l.* per fathom. The meeting is to be held on Aug. 4, when all labour cost will be charged up to July 17, and the merchants' bills to June. Even with everything charged up close, and dues all paid, we are informed that a profit will be shown on the quarter of 2000*l.*, notwithstanding that 26 weeks' costs will have been debited to the account, whilst the reserves are valued at more money than they were at the last meeting. The profit to be shown at the next meeting will be a genuine one.—*West Briton.*

* "The Great Dominion: an Address delivered at the request of the Members of the Manchester Reform Club." By EDWARD JENKINS, M.P., Agent-General for Canada. London: *Canadian News* Office, Whitefriars-street.

NAGEL AND KEMP'S CHARGING APPARATUS FOR CENTRIFUGAL PUMPS, &c.

Fig. 1.

Fig. 2.

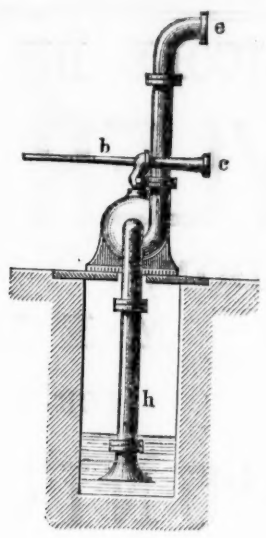


Fig. 3.

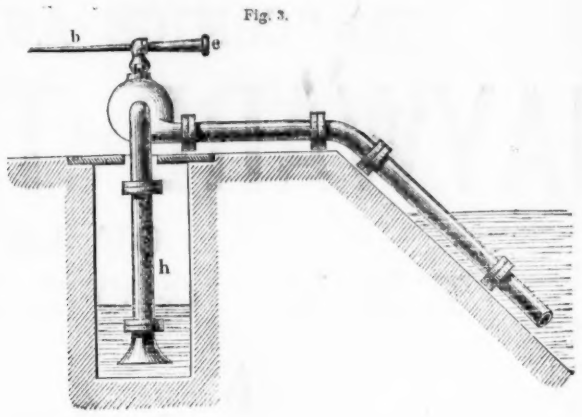
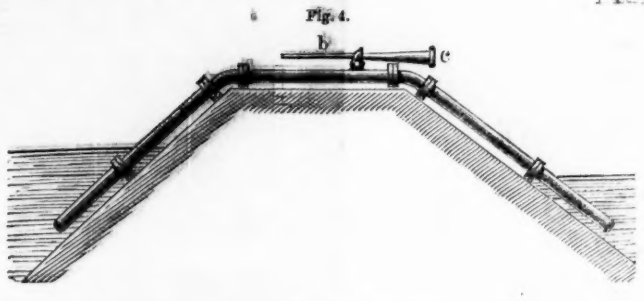


Fig. 4.



NAGEL AND KAEMP'S CHARGING APPARATUS FOR CENTRIFUGAL PUMPS, &c.

It is a well-known thing that centrifugal pumps in general have one common defect, which consists in the difficulty of filling these pumps at a start. Of course, this drawback does not present itself in cases where the pump can be placed below water-level, but instances such as these are of very rare occurrence. Adjusting foot-valves to centrifugal pumps hinder the flow of water, and are not easily kept perfectly closed, especially when thick liquids are being worked. The larger the pumps the larger are the suction-pipes, and naturally the valves are also kept in due proportion, which valves are, moreover, always out of reach—*i.e.*, under water when working. To remove these difficulties the charging apparatus of Nagel and Kaemp has been designed for rapidly charging centrifugal pumps, syphons, &c., without the use of valves. Our first woodcut shows this apparatus one quarter full size, and the subsequent figures show various applications of this invention.

In the first instance, it is adjusted on the top of the centrifugal pump, where it is screwed on, and its end (e) is closed up with clay. Its other end (b) is supplied with a pipe leading to the steam-boiler. For charging the pump the cock (H) is opened, the steam rushes in from b, expels the air from the pipe (h), consequently also from the pump. The water rises accordingly, and at last reaches the steam, condensing the latter, until it flows out of the (C) end of the apparatus, thus filling the pump with water. The latter may now be worked, and the orifices of the suction apparatus are then closed. The adjusting of this apparatus to a centrifugal pump is shown in our Fig. 2. A further application of this apparatus is in adapting it to high lifts. It is well known that when water is contained in a rarefied atmosphere the air therein contained liberates itself, which liberation becomes all the more rapid the greater the vacuum is. It is owing to this reason that many high lifts refuse to work if the atmosphere is not periodically expelled from their highest accumulating point. If this apparatus be applied in such cases as shown in fig. 3, a very slight jet of steam will expel the air from their highest point.

A further application of this charging apparatus is in its regular operation, so that it might be applied as reserve or even main pumps, as represented in fig. 4, where it is applied direct to the syphon pipe. In cases of considerable difference of water-levels such an application would be very advantageous.

This apparatus might unquestionably be used for many other purposes, such, for instance, as air-pump, as ventilator, &c.

RAILWAY SPEED-INDICATOR.

Fig. 1.

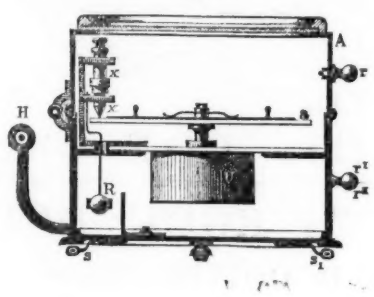
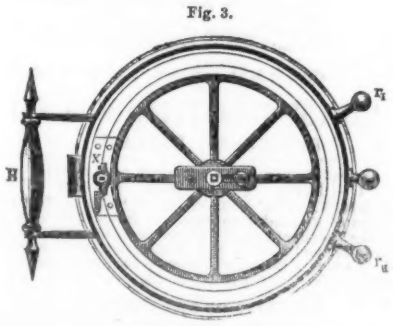


Fig. 2.

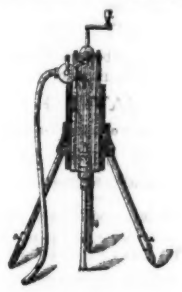
Fig. 3.



RAILWAY SPEED-INDICATOR.

In the annexed Figs. 1, 2, 3, we illustrate Sammann and Weber's railway speed-indicator, as constructed by Messrs. Schaffer and Budenburg, of Magdeburg and Manchester. Its object is to register automatically the stopping and travelling periods of trains. Referring to Fig. 1, which shows the speed indicator in section, a strong clockwork (U) is arranged inside, which causes a circular plate (a) to revolve with a speed corresponding to that of the small or hour finger of a watch. A small pencil (x x) is loosely carried by two slender watch springs, and a weight (R) suspended in connection with this pencil acts as a pendulum. A circular piece of stiff paper, prepared and divided into hours and minutes, is placed in the forementioned plate (a) and kept in its position by springs, though it can easily be taken out and replaced. This paper turning round with the plate (a) the stationary pencil point working on its surface corresponds to the hour finger of a watch. The box (A) rests on india-rubber cushions (s s), in order to transmit the vibrations of the train when travelling to the pendulum (R), which in its turn remits the oscillations to the pencil (x x). Now, if this speed indicator is so placed that the vibrations of the train cause the pendulum to swing in the direction of the handle (H), then, provided the clockwork is going, the pencil point will be describing closely-packed lines in opposite direction to the concentric circles drawn on the prepared piece of paper. On the other hand, if the train comes to a standstill the vibrations will cease, the pendulum (R) will likewise come to a standstill, and the point of the pencil will, during the stoppage, describe concentric arcs to the circles drawn on the paper. The manner in which the pencil registers is shown in our Fig. 2, which shows the prepared piece of paper one-third of its full size. As the divisions are made very conspicuous in the original, by examining these diagrams the length of time taken up on the journey and that of the stoppages will be readily seen. The handle (H) serves to carry the speed-indicator, and r, r, and r, are three projections for ensuring the stoppage of the pencil when required. Fig. 3 shows a plan of the indicator drawn to the same scale as Fig. 1—one-sixth full size.

THE "LEVET" ROCK DRILL.



This machine is a French invention of great merit, and is being introduced by Messrs. CHARLES HARWOOD and Co., of St. Stephen's Chambers, Moorgate, who, in describing the advantages of the new drill, remark that it is an admitted fact that the difficulty with all former rock drills has been occasioned by the excessive wear and tear of the rotating arrangement, resulting in constant renewal of parts. In many cases users have from this cause been somewhat dissatisfied with rock drills, whereas with a proper, simple, and sure rotating device there would have been no liability to derangement, they would have been thoroughly satisfied, and their works would have been advanced at about double the rate possible by hand labour. In some cases the machines have been rotated by means of feathers working in grooves, or by twisted or spirally grooved bars working in washers, the friction being excessive and constant in both cases during the whole of the stroke. Other modes of rotation have been tried, which are even more objectionable. In the "Levet" rock drill the rotating arrangement entirely overcomes the above-named difficulty, obviates the evils referred to, reduces the movement friction to a minimum, and exerts the maximum of power to ensure the partial rotation of the boring-tool at each stroke. One special advantage in this drill deserves notice. The valve is actuated by the same arm that partially rotates the boring-tool with the minimum amount of movement, and entirely free from shock or blow. There is very little doubt that the arrangement for the partial rotation of the piston-rod and drill at each stroke has caused more trouble to users of rock drills, from imperfect action and breakage, than any other part of these machines, and any rock borer which overcomes these difficulties is deservedly worthy the attention of the mining community.

During the past week the "Levet" rock drill has been thoroughly tested in London upon very tough granite, and works with a smoothness and regularity which is really admirable, and the numerous practical men, miners, and others who saw it in operation expressed themselves, after careful investigation and examination, much pleased with the simplicity of the machine, and especially the rotating device—its action being certain, and there is little or no movement friction. It was mentioned that it has been exclusively adopted after trial in preference to all others by one of the largest mining companies in France (who have just had ten of these drills delivered to them), and who employ a large number of drills in their works, and have had more experience in rock-boring machinery than any other mining company in Europe.

It is claimed that the "Levet" drill will bore the hardest rocks, such as granite, ironstone, whinstone, limestone, &c., at the rate of 2 in. to 1 ft. per minute, according to the size of the machine and the nature of the rock bored. It can be used at any angle and in any direction, and the larger machine will bore holes 3 in. in diameter to a depth of about 20 ft., and at about double the rate of the smaller drill. A proper drill point when used in this drill will, it is said, bore through about 10 ft. of granite without sharpening, whereas about 2 in. is the usual average bored by hand. Swages for forging the drill points are supplied with each machine, so that any ordinary blacksmith can sharpen them. The motive-power used may be either steam or compressed air. At great depths underground the use of compressed air is advisable, and in many cases necessary, and has the advantage that after the air has passed through the machine it exhausts into the mine, and thus gives ventilation.

The introduction of the "Levet" drill will be watched with much interest, as the arrangement is believed to have entirely overcome the difficulty experienced in former rock drills.

COMBINED HIGH AND LOW PRESSURE ENGINE.—The invention of Mr. T. L. JONES, of Natchez, Mississippi, U.S., has special reference to engines making 50 to 70 revolutions per minute. He employs a peculiar device, whereby the exhaust steam at each stroke of the piston as it comes from the cylinder is suddenly diverted all but one atmosphere or thereabouts to the open air, and the remainder to a condenser. This device consists of a valve chest arranged near the cylinder and connected with the exhaust ports thereof by any suitable connections. Inside the valve chest or diverting chamber is arranged a valve seat in which are two series of ports, one series leading to the open air and the other to the condenser; the several ports of either series being alternately arranged. The space above the valve seat constitutes the diverting chamber proper. A slide valve actuated by an eccentric or cam on the main shaft and also provided with a series of openings corresponding in shape and spacing to the ports serves to alternately open and close the two series of ports in the valve seat. The openings both in the seat and valve are very narrow in the direction of the movement of the valve, and wide in the cross direction. The manifold openings provide for the sudden escape of the steam with but a slight movement of the valve. In the operation of the said invention, the valve is alternately pressed down upon and up from the seat according to the connection with the open air or the condenser. To hold the valve, therefore, in place a peculiar device is arranged above the valve and bearing upon it, which holds the valve at any desired position with relation to the valve by means of an adjustment screw extending thraugh the outer wall of the chest. The steam circulates freely around this holding device and against the valve.

IMPROVED LAMPS.—The invention of Mr. FRANK RHIND of Brooklyn, U.S., consists, first, in a combined extinguishing device and flame spreader, which is so hinged to the ends of the wick tube that when opened outward it forms a break or check to the current of air that rises up along the ends of the flame and prevents it from spreading. Second, in a ring secured to the upper end of the operating rod, and the spring by which the extinguisher and spreader is operated. Third, in the devices by which the operating rod is prevented from closing the extinguisher; and fourth, in forming through the bowl, a little to one side, a tube, up through which the rod for operating the extinguisher passes. Pivoted to the side of the lamp standard near its base is a hand plate extending upward to the base of the bowl, and having a small metal ring or loop attached thereto, and passing the operating rod in order to connect the plate and rod together. When the rod is moved upward this ring draws the plate inward towards the standard, in which position it causes the ring to assume a vertical position, and thus prevent the movement of the operating rod. Upon the upper end of the rod is formed another ring which fits over the mouth of the bowl and upon which the lower part of the operating spring rests. By thus forming a continuous ring for the bearing of the spring, the spring will always have a bearing; and it entirely dispenses with the need to adjust a foot under the spring each time the lamp is moved. Pivoted to the upper end of the wick tube are two curved wings, which swing up over the top of the wick so as to extinguish the flame from the ends of the tube instead of from the side, as customary. These wings are made sufficiently wide that when pressed back over the top of the wick they strike against the top of the burner and break the current of air rising along the edge of the flame and prevent its spreading. By these means an extinguisher and flame spreader is formed by the same device. The wings are operated by the spring, which catches into ears formed on the outside of each wing. The tube for the operating rod is open at both ends, and is blown in one piece with the bowl.

FILE-CUTTING MACHINE.—A machine in which a bed is used that rests directly upon the feed screw, the said screw being of sufficient strength to support the bed while the file is cut, has been invented by Mr. CHARLES VOGEL, of Fort Lee, New Jersey, U.S. The feed-motion of the screw is produced by a ratchet-wheel and pawl; and with these parts is combined a spring which acts on the cover of the journal box at one end of the feed screw, the said cover being supported by an eccentric. The bed is saddle shaped, and with it is combined a frame with parallel motion links, for the purpose of lifting the bed out of gear with the feed screw. This bed is provided with a cavity to receive a semi-cylindrical secondary bed, and with these two beds is combined a gauge which bears on the secondary bed and maintains the surface of the file blank parallel with the edge of the cutter. The file blank is retained on the secondary bed by clamping jaws and a spring. The stock which carries the cutting tool moves between guides or slides, which can be set to insure accurancy in the movement of the cutter. The tool stock is operated by compressed air.

REFINING SALTPETRE.—The invention of Mr. GEO. HAYCRAFT, of Faversham, relates to the arrangement of the vessels in which the several stages of the refining process are performed, in such a manner that the saltpetre will be caused to pass by gravitation alone from vessel to vessel, whereby hand labour and the use of pumps for lifting the saltpetre from one level to another is dispensed with; to the method of boiling the rough saltpetre by introducing steam among the mass, with or without the use of a steam coil; to the method of recovering saltpetre from the mother liquor which drains from the refined saltpetre; and to the method of cooling the saltpetre during crystallisation, as well as to the construction of the boiling and reducing vats, the agitators and the arrangement of gearing for driving the same.

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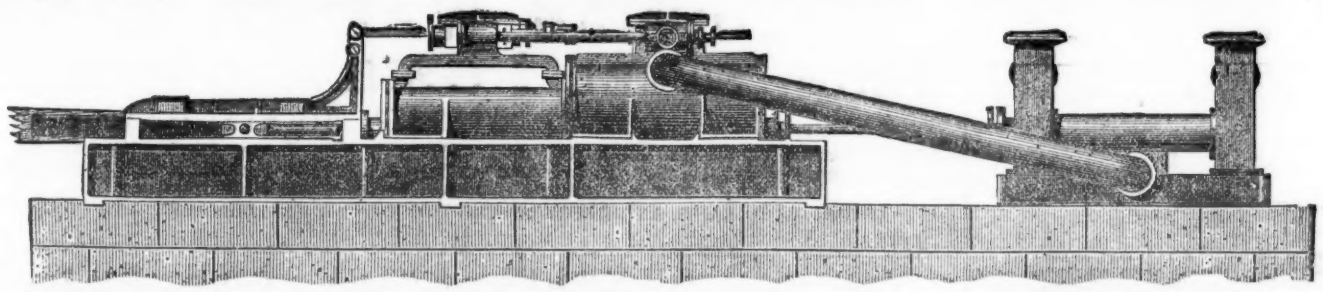

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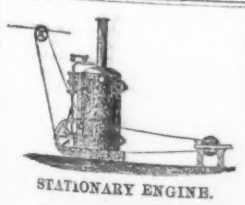
FURTHER PARTICULARS ON APPLICATION.



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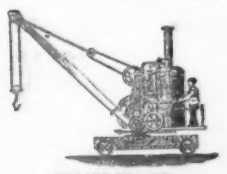

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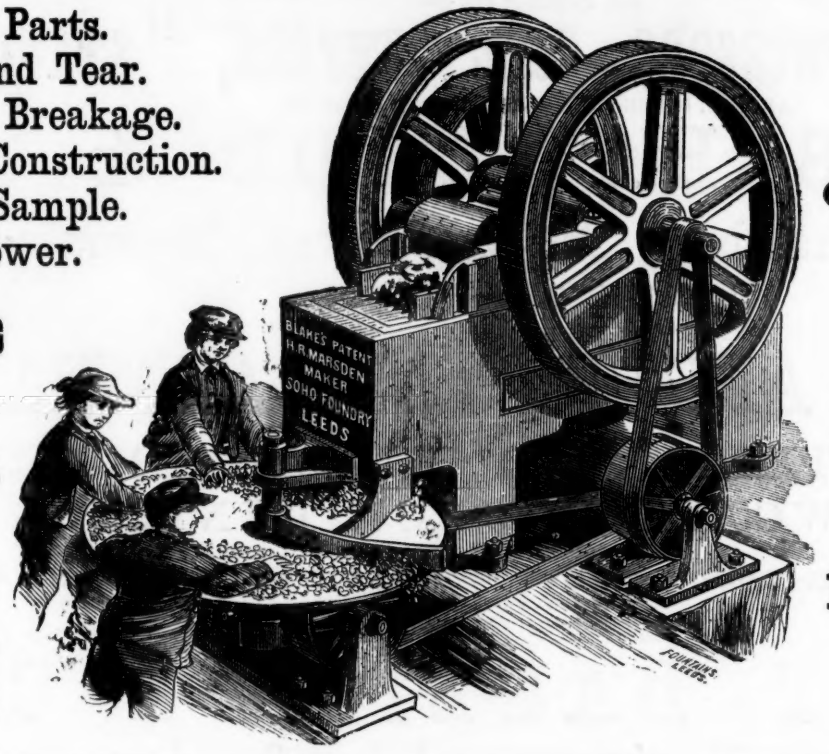

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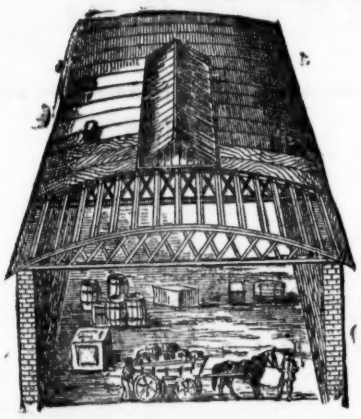

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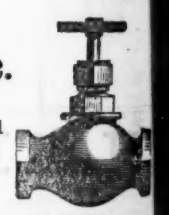

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